

**Enbridge Line 6B MP 608 Pipeline Release**

**Marshall, Michigan**

**Soil Staging, Decontamination and River Access Site Closure Plan**

**January 11, 2011**

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**Prepared: January 11, 2011**

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# 1.0 Introduction

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In support of the management of contaminated soil and debris generated during remediation activities relating to the of the Enbridge (the Company) Line 6B crude oil release near Marshall, Michigan (see **Figure 1**), two soil staging areas were constructed. Soil staging area A is located east of Talmadge Creek, south of Division Drive, and east of Interstate 69. The soil staging area in Yard 4 is located north of Talmadge Creek and west of Interstate 69. Decontamination (decon) areas were also constructed in Frac Tank City (FTC) and Area C0.5. **Figure 2** shows the locations of the two soil staging areas and the decon areas within FTC and Area C0.5.

During the oil release response activities, approximately 70 separate work sites were established along both sides of the Kalamazoo River along the length of the response area from the confluence of the Talmadge Creek to Morrow Lake Dam. These “river access sites” were occupied by response personnel for equipment and material staging, decontamination, waste staging and similar activities. The river access sites are privately-owned, Enbridge-owned, Enbridge-leased lands and certain public lands. In addition, there are several work sites occupied by response personnel that were not used for purposes other than river access. These, “other work sites” include Staging Yards 1, 2, 3 and 5. **Attachment A** is a list of river access and other work sites. Finally, there are numerous sites identified as potential work sites and that were secured with Right-of-Way agreements with the land owner but which were never developed for work. These sites were visited and evaluated to verify that they were not used.

This Closure Plan is intended to define conditions at the Sites occupied and used by Enbridge. The Plan is not intended to address impacts that are directly related to the pipeline release, but to address secondary impacts that may have occurred during response activities. Each site closure will be contingent upon the analytical results generated from the soil sampling detailed in this Plan. The analytical results will be compared to applicable Part 201 generic residential cleanup criteria to determine if the site may be considered closed. Once the site is determined to be closed, remediation activities will no longer be deemed necessary.

## 1.1 Overview

The objectives of this Soil Staging Decontamination and River Access Sites Closure Plan (the Plan) are to describe the actions that will be implemented and the estimated schedule for closing the following locations:

- Soil Staging Area A (SSAA), cells 1- 8, and oily mat storage and decon areas.
- Soil Staging Area in Yard 4 (Yard 4), cells 9 – 11 and cell 12 (decon area).
- Frac Tank City (FTC).
- C0.5 Work Areas.
- River Access Sites.
- Other Work Sites.

More specifically, this Plan describes:

- The actions required to close the two soil staging areas, FTC and C0.5.
- The soil sampling activities that will be performed within the two soil staging areas, FTC and C0.5, following removal of constructed features and underlying soils (if necessary).
- Interim measures to be implemented for areas not anticipated to be closed until 2011.
- The anticipated priority and schedule for closure.
- The river access and other work site environmental evaluation and soil sampling plans to address impacts, if any, to these sites associated with Enbridge's occupation of the site.

This Plan does not describe the landscape restoration activities that may be implemented by the Company after the soil staging, decon areas, river access and other work sites have been closed, sampled, backfilled or permanently closed. Gravel imported for use during response activities will be removed and properly disposed. This imported gravel will not be evaluated as part of this Plan. Also, all containment liners will be removed from areas before environmental evaluations and sampling are completed.

Closure activities described in this work plan including soil sampling will not be performed at work sites that Enbridge plans to use throughout the winter or to reactivate in the spring except as noted below.

## **2.0 Soil Staging and Decontamination Areas**

It is anticipated that the project will continue to need a centralized area throughout the fall of 2010 and into 2011 for staging and stockpiling contaminated soil and debris pending arrangements for off-site disposal. Three cells (Cell 2, 4, and 5) in SSAA will be winterized and remain open during the winter or winterized (as described below) in 2010 and will re-open in early 2011. Prior to winter these three cells will be relined with a double bottom liner and a timber mat floor will be placed over the liners. These three cells will be emptied and covered or will be maintained with a minimum amount of soil in order to enable a cover liner to shed precipitation from the cell. In either event, the three cells and the decon area at FTC will be maintained over the winter for use in 2011 and will be secured for the winter with snow fencing.

The following section describes the anticipated closure schedule, activities related to closure, and verification soil sampling to be conducted in 2010 and 2011.

### **2.1 Closure Schedule**

Based on input from the on-site disposal vendor (Safety-Kleen), and other on-site contractors responsible for various activities in the soil cells and decon areas the anticipated closure schedule is shown in Table 1. As indicated in Table 1 it is anticipated that some sites will be closed in 2010 and some sites will be closed in 2011. Those sites that are planned for use in 2011 will be winterized.

**Table 1  
Anticipated Closure Schedule**

<b>Soil Staging and Decon Areas</b>	<b>Anticipated Date to Start Closure Activities</b>
<b>Soil Staging Area A</b>	
Cell 1	As early as mid-October 2010
Cell 2, 4, 5 and decon areas	2011
Cell 3	As early as mid-October 2010
Cell 6	As early as mid-October 2010
Cell 7	As early as mid-October 2010
Cell 8	As early as mid October 2010
<b>Yard 4 Staging Area</b>	
Cell 9	As early as mid-October 2010
Cell 10	As early as mid-October 2010
Cell 11	As early as mid-October 2010
Cell 12/decon area	As early as mid-October 2010

<b>Soil Staging and Decon Areas</b>	<b>Anticipated Date to Start Closure Activities</b>
<b>Frac Tank City</b>	
FTC decon area	2011
<b>Area C0.5</b>	
C0.5 decon area	As early mid-November 2010

## **2.2 Closure Activities**

Following emptying of each cell, roads, parking areas, and/or support areas, a series of closure activities will be conducted in 2010 and 2011, including:

- Removal and disposal of the underlying liner and perimeter berms for the cells.
- Removal and disposal of contaminated mat roads, if present.
- Dismantling, removal and disposal of the decon areas at each soil staging area, at FTC and C0.5.
- Removal and disposal of contaminated soil, if any, from below the cell or decon area footprint.
- Conducting verification soil sampling and comparing the analytical results to Part 201 generic residential criteria for soil (appropriate Michigan Department of Natural Resources and Environment (MDNRE) criteria).
- Backfilling and closing locations based on the results of verification soil sampling.

A field representative, designated by the Company, will be on-site to classify and visually screen soil to confirm that excavation below the soil cell and decon area footprints removed obviously impacted soil. All field screening and soil and debris sampling for disposal will be conducted in accordance with the Sampling and Analysis Plan prepared for Michigan Department of Natural Resources and Environment (MDNRE) and the Waste Treatment, Transportation and Disposal Plan (WTTDP).

Following completion of the field screening activities, a snow fence will be placed around the cell or decon area footprint prior to conducting verification soil sampling and will remain in place until restoration activities are completed.

## **2.3 Verification Soil Sampling**

Following the removal of constructed features and any contaminated soil beneath the soil cells and decon area footprints, verification soil samples will be collected for laboratory analysis. MDNRE

will be notified of each sampling event and samples will be collected when a representative from the MDNRE is present. The target soil analytical parameters are shown below in **Table 2**. Samples will be analyzed in accordance with the Quality Assurance Project Plan prepared for MDNRE and the results will be compared to Part 201 generic residential criteria. Soil sampling will be conducted in accordance with the Sampling and Analysis Plan (SAP). The sampling approach for SSAA, Yard 4, FTC and C0.5 are summarized in the following sections.

For the metals listed in **Table 2**, the cleanup criteria against which the data will be compared will include state-wide default background concentrations. Also, Enbridge may develop site-specific background concentrations for these metals.

The soil samples will be collected by hand with an auger or trowel. Samples will be preserved, shipped and analyzed as specified in the SAP. Surface soil samples will be collected from 0-6 inches below the surface. The global positioning system coordinates of each sample and field observations will be recorded. The borings will be backfilled with adjacent soil. The results of the soil sample analysis will be tabulated and used to direct possible future investigation and interim response activities pursuant to Michigan regulations.

Should excavations proceed to a depth of two feet or greater, a minimum of four sidewall samples will be collected from each excavation. For “small” site areas, the four sidewall samples will be added to the total number of samples collected. For medium or large site areas, the MDNRE Sampling Strategies and Statistics Training Materials document will be used to calculate the appropriate number of sidewall samples.

**Table 2**, below, is the list of analytical parameters for soil samples from former storage areas at the river access sites.

**Table 2  
Soil Analytical Parameters**

Parameter	EPA Analytical Method <sup>1</sup>
<b>Volatile Organic Compounds (VOCs)<sup>2</sup></b>	8260B
<b>Polynuclear Aromatics (PNAs)</b>	8270
<b>Metal Parameters</b>	
Beryllium	6020
Molybdenum	6020
Vanadium	6020
Percent Moisture	ASTM D-2216

(1) Analytical methods based on Draft QAPP dated November 11, 2010.

(2) Methanol preservation required.

### **2.3.1 Soil Staging Area A (Cells 1 – 8)**

SSAA consists of eight separate soil/debris staging cells, an oily mat storage area, and an equipment decontamination cell, along with the accompanying access roads, parking areas, and office trailers. As stated previously, Cells 2, 4, and 5 will be maintained until site activities are completed in 2010 and re-opened in 2011.

In late fall, prior to winter, cells 2, 4 and 5 will be emptied and relined. After cells are emptied and the old liner removed two soil samples will be collected from surface soil and analyzed prior to installation of a new liner. These two soil samples locations will be biased toward the middle of the cell footprint and biased toward locations where soil staining was observed and removed prior to sampling.

As shown in **Table 3** below, the various areas of SSAA fall into either the small or medium site category as described in the *MDNRE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (2002). Following the formula presented on page 4.33 of that document, applicable grid intervals were calculated for the individual areas within SSAA. The total area of SSAA, however, falls into the large site category, yielding an expanded grid interval applicable to the areas used for roads, parking, and other support activities. Within each area targeted for closure, 25 percent of the grid locations were then randomly selected for verification sampling. As shown on **Figure 3**, this approach results in a total of 160 sample locations within SSAA.

**Table 3  
SSAA Grid Spacing and Samples**

<b>Location</b>	<b>Approximate Area (square feet)</b>	<b>MDNRE Category Size</b>	<b>Calculated Grid Spacing (ft)</b>	<b>Approx. No. of Samples</b>
Cell 1	11,840	Medium	15.3	14
Cell 2	15,791	Medium	17.7	16
Cell 3	15,680	Medium	17.7	12
Cell 4	5,686	Small	21.3	4
Cell 5	12,087	Medium	15.5	14
Cell 6	12,063	Medium	15.5	14
Cell 7	7,680	Small	24.7	4
Cell 8	21,647	Medium	20.8	14
Oily Mat Storage Area	5,482	Small	20.9	4
Equipment Decon Area	12,819	Medium	16.0	15
Balance of Total Area – SSAA	368,611	Large	39.6	49

**2.3.2 Soil Staging Area Yard 4 (Cells 9, 10, 11, 12)**

Soil staging area in Yard 4 consists of three separate soil/debris staging cells and a decon area (cell 12), along with the accompanying access roads, and parking areas. As shown in **Table 4** below, the three soil cells, cell 12, and support areas of Yard 4 fall into the small or large site category as described in the *MDNRE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (2002). Following the formula presented on page 4.33 of that document, applicable grid intervals were calculated for the combined areas. Within each area targeted for closure, 25 percent of the grid locations were then randomly selected for verification sampling. As shown on **Figure 4**, this approach results in a total of approximately 51 sample locations within Yard 4. Prior to implementing the sampling program in Yard 4, the disturbed areas of the property will be surveyed and the number of samples will be adjusted if necessary.

**Table 4  
Yard 4 Grid Spacing and Samples**

<b>Location</b>	<b>Approximate Area (square feet)</b>	<b>MDNRE Category Size</b>	<b>Calculated Grid Spacing (ft)</b>	<b>Approx. No. of Samples</b>
Cell 9	7,464	Small	24.4	4
Cell 10	8,368	Small	25.8	4
Cell 11	7,465	Small	24.4	4
Cell 12/decon area	9,042	Small	26.8	4
Support areas	159,536	Large	33.0	35

### 2.3.3 Frac Tank City Decon Area

The FTC decon area is anticipated to be utilized until site activities are completed in 2011. Therefore, this area will be winterized and secured with snow fencing following completion of activities in 2010. The approach to soil verification sampling anticipated in 2011 is outlined below.

As shown in **Table 5** below, the decon area of FTC falls into the medium site category as described in the *MDNRE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (2002). Following the formula presented on page 4.33 of that document, an applicable grid interval was calculated for the FTC decon area. Within this area, 25 percent of the grid locations were then randomly selected for verification sampling. As shown on **Figure 5**, this approach results in a total of 14 sample locations within the FTC decon area.

**Table 5**  
**FTC Area Grid Spacing and Samples**

<b>Location</b>	<b>Approximate Area (square feet)</b>	<b>MDNRE Category Size</b>	<b>Calculated Grid Spacing (ft)</b>	<b>Approx. No. of Samples</b>
Decon Area	27,959	Medium	23.6	14
Frac Tank City	470,230	Large	27	173

### 2.3.4 Frac Tank City

Frac Tank City (FTC) consists of large numbers of frac tanks, decon areas (see above), an activated carbon water treatment system, equipment storage areas, a fueling area, roads, parking areas and office trailers. The FTC area is anticipated to be required until site activities are completed in 2011. Therefore, this area will be winterized and secured following completion of activities in 2010. The approach to soil verification sampling anticipated in 2011 is outlined below.

As shown in **Table 5**, above, the FTC falls into the large site category as described in the *MDNRE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (2002). Following the formula presented on page 4.33 of that document, an applicable grid interval was calculated for the FTC. Within this area, 25 percent of the grid locations were then randomly selected for verification sampling. As shown on **Figure 7**, this approach results in a total of 173 sample locations within the FTC area.

### 2.3.5 C0.5 Decon Area

The C0.5 decon area is anticipated to be utilized until site activities are completed in 2011. The area will be winterized and secured with snow fencing following completion of activities in 2010. The approach to soil verification sampling anticipated in 2011 is outlined below.

As shown in **Table 6** below, the C0.5 decon area falls into the large site category as described in the *MDNRE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (2002). Following the formula presented on page 4.33 of that document, an applicable grid interval was calculated for this area. Within the C0.5 decon area, 25 percent of the grid locations were then randomly selected for verification sampling. As shown on **Figure 6**, this approach results in a total of 62 sample locations within the C0.5 decon area.

**Table 6**  
**C0.5 Grid Spacing and Samples**

<b>Location</b>	<b>Approximate Area (square feet)</b>	<b>MDNRE Category Size</b>	<b>Calculated Grid Spacing (ft)</b>	<b>Approx. No. of Samples</b>
Decon Area	352,400	Large	39	62
Submerged Oil Dredging, Water Treatment and Geotube Area	159,933	Large	32	45

The grid spacing and number of samples presented in **Table 6** above may change depending on the use of the two C0.5 areas in 2011.

### 2.3.6 C0.5 Submerged Oil Dredging, Water Treatment and Geotube Area at Ceresco Dam

The submerged oil dredging, water treatment and geotube area at C0.5 consists of a geotube laydown area for filtering the dredged material prior to water treatment (area sized for a dozen or more geotubes), a water treatment system for water from the dredged material that includes three bag filter and carbon filter treatment systems and adjacent access roads. This water and oil treatment system location is anticipated to be required until site activities are completed in 2011. The area will be winterized and secured with snow fencing following completion of activities in 2010. The approach to soil verification sampling anticipated in 2011 is outlined below.

As shown in **Table 6**, above, the oil/water treatment and geotube area falls into the medium site category as described in the *MDNRE Sampling Strategies and Statistics Training Materials for Part*

*201 Cleanup Criteria* (2002). Following the formula presented on page 4.33 of that document, an applicable grid interval was calculated for this area. Within the treatment area, 25 percent of the grid locations were then randomly selected for verification sampling. As shown on **Figure 8**, this approach results in a total of 45 sample locations within the treatment area.

## **3.0 River Access and Other Work Sites**

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The River Access and Other Work Site Closure Plan in Section 3.0 is a work plan to complete Phase I Site Environmental Evaluations (SEE) and Phase II Site Environmental Investigations (SEI) for river access and other work sites occupied by Enbridge in response to Line 6B MP 608 release in Marshall, Michigan. **Attachment A** includes a list of river access and other work sites. **Attachment B** includes a set of aerial photos showing each site location.

Enbridge is utilizing property that is Enbridge-owned, privately-owned, Enbridge-leased lands and potentially certain public lands to provide for river access for equipment and material staging, decontamination, waste staging and similar activities related to responses to the Line 6B MP 608 release. The following work plan will be completed to summarize available information related to the environmental site conditions through all phases of occupation, including:

- 1) Pre-Occupation (before any mobilization to or work activities at sites)
- 2) Occupation (during work activities)
- 3) Post-Occupation (after demobilization and closure activities are completed)

In general it is anticipated that the SEEs and SEIs will be done after equipment, consumables and liners are removed from the site, but before landscape restoration occurs, if possible. The SEE and SEI activities performed under this work plan will not address impacts directly related to the Enbridge release such as presence of crude oil that is visually apparent on soil, oiled tree trunks and structures and oil-impacted surface water, sediments and stream banks. The work plan for River Access Sites will address environmental conditions associated only with site occupation. If oil is observed that is directly from the Line 6B release, the appropriate personnel will be notified to address the oil.

### **3.1 Phase I Site Environmental Evaluation Activities**

The objective of the SEE is to identify “recognized environmental conditions” at the sites that directly or indirectly result from activities associated with Enbridge’s occupation of the site. The SEE uses methods similar to the ASTM Standard Practice E1527-05 and E1903-97 for Phase I Environmental Site Assessments. However, the SEE was developed for a specific purpose and is not intended to be entirely consistent with the ASTM methods.

The following definition from the ASTM standards is important for understanding the approach.

*recognized environmental conditions (REC)* - the presence or likely presence of any *hazardous substances* or *petroleum products* on a *site* under conditions that indicate an existing release, a past release, or a material threat of a release of any *hazardous substances* or *petroleum products* into structure on the *site* or into the ground, ground water, or surface water of the *site*. The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include de minimus conditions that generally do not represent a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not *recognized environmental conditions*. However, for purposes of Enbridge's site evaluations, any de minimus conditions observed will be addressed as RECs.

As indicated above, the SEE will not include RECs directly related to the Enbridge release such as presence of oil that is visually apparent on soil, oiled tree trunks and structures and oil-impacted surface water, sediments and stream banks.

The SEE will also include an evaluation of impacts (dredge and fill) on wetlands and floodplains at the sites. Dredging in the river will not be included in the evaluation.

A SEE will be completed for each occupied (or formerly occupied) site according to this work plan to the extent practical within the project's limits, access, and other constraints. The SEE will include the following four activities:

1. Review of general information (Section 3.1.1).
2. Review of records available from Enbridge such as aerial photos, other photographs, inspection reports and operational and logistics activities that occurred at the site (Section 3.1.2).
3. Visual inspection of the Site (Section 3.1.3).
4. Interviews with persons familiar with activities that occurred at the site (Section 3.1.4).

A checklist to assist in this process is in **Attachment C**.

### **3.1.1 Review of General Information**

General site information will be reviewed and evaluated as appropriate. General information about the site will include:

- Site name, location (section, segment, and GPS coordinates),
- Site map and Enbridge aerial photographs

- Information and Enbridge photographs regarding what the pre-use conditions were at the site
- Site use
- Where significant features were located at the site (e.g. Secondary containment, roll-offs, decontamination pads, etc.)
- Wetland and floodplain boundaries, where known

If possible, site information will be collected from all three phases of occupation (pre-occupation, occupation and post-occupation). This will not be possible at some sites.

### **3.1.2 Review of Records**

Records will be reviewed from readily available Enbridge documentation such as inspections reports, equipment used, consumables used and aerial photographs relating to occupation or demobilization activities. The review will attempt to identify hazardous substances used (raw materials, operating supplies, oil-containing equipment, etc.), generated, and/or released on the Sites.

### **3.1.3 Visual Site Inspections**

Site inspections will be performed to look for visual signs of RECs or potential wetland and floodplain concerns on or immediately adjacent to the Site.

The visual inspection will include:

- Observe accessible portions of the Site and the portions of adjacent parcels from the Site and public roads for RECs, such as the improper storage or use of petroleum products, chemicals or wastes, and the presence of tanks, oil-filled electrical equipment, stains, unusual odors, filled areas, excavated areas and other indications of the potential presence of hazardous substances of regulatory concern.
- Describe or list each identified large aboveground storage tank (AST) or underground storage tank (UST) or other storage containers that is on the Site (except water tanks), and identify observed exterior tanks on adjacent parcels that may present a significant environmental risk if a release were to occur.
- Photograph relevant features (shorelines, launches, former decon areas, roll-off storage, unusually discolored soil, or other significant features. etc.). Relevant features will be marked on a site map. Areas with no recognized environmental conditions will also be photographed.
- Complete an initial site investigation checklist (see **Attachment C** for blank checklist form)

### **3.1.4 Interviews**

Site operators or others familiar with operations at the site will be interviewed to identify RECs. Information from interviewees will be recorded on the field form in **Attachment C**. In some cases it will not be possible to identify an appropriate person to interview and this will be documented.

Some of the River Access Sites that have no RECs, no visual impacts associated with occupation and where there was no material storage do not need to be further assessed and can be closed when landscape restoration activities are completed. The determination that an access site does not need further environmental evaluation or sampling will be based on information regarding use of the site and visual inspections from the SEE activities. A determination that an access site does not require sampling and the basis for that determination will be documented. A Phase II Site Environmental Investigation (following section) will be completed for sites that do have RECs and that may require sampling.

## **3.2 Phase II Site Environmental Investigation Activities**

The significance of each identified REC will be assessed using professional judgment considering such factors as its nature, magnitude, and known or potential impact upon the Site, and if associated with an off-site source the location of that source with respect to the Site.

Generally, the scope of work for a SEI is determined after the SEE has been completed, and RECs identified. SEIs will not be needed for all sites. The need for further site investigation will result from an evaluation of the site information collected during the Phase I SEE. Additional site investigation is generally warranted if an evaluation of the Phase I SEE reveals:

- 1) Soil staining or other RECs that appears to be caused by occupation activities.
- 2) A site already investigated undergoes new occupancy or use.
- 3) The presence of waste storage or hazardous substance storage containers that present the potential for a release.

### **3.2.1 Verification Soil Sampling Plan**

Verification soil samples will be collected from river access and other work sites where one or more of the conditions listed above exist. All verification soil sampling events performed for river access and other work sites will be biased sampling and will target the exact locations where staining exists or there is a potential for a release (i.e. locations most likely to be impacted). In some instances background samples for metals analyses may be collected and possibly compared to site-specific

background criteria generated by a site-wide background study or a background study focused more locally near the location of potential concern.

MDNRE will be notified of each sampling event and samples will be collected when a representative from the MDNRE is present. Samples will be analyzed in accordance with the MDNRE requirements (Op. Memo No. 2), and the results will be compared to Part 201 generic residential criteria. For the metals listed in Table 2, the cleanup criteria against which the data will be compared will include state-wide default background concentrations. Also, Enbridge may develop site-specific background concentrations for these metals.

If the SEE identifies a REC related to site occupancy, the Environment representative will direct excavation of visually impacted soils, if present, and will collect a sample once visual observation of the excavation indicates that no visual impact remains. The objective of the Phase II SEI is to collect and analyze sample(s) to determine if there has been a release at a site to the extent possible based on limited sampling and analyses. The Phase II SEI is not intended to identify the extent of contamination, only if contamination is present.

Soil samples will be collected by hand with an auger or trowel. Samples will be preserved, shipped and analyzed as specified in the sampling and analysis plan prepared as a condition of the November 1, 2010 *Administrative Consent Order and Partial Settlement Agreement*. Surface soil samples will be collected from 0-6 inches below the surface. Soil samples will be analyzed for parameters listed in Table 2. The global positioning system coordinates of each sample will be recorded. The sample holes will be backfilled with adjacent soil. The results of the soil sample analysis will be tabulated and used to direct possible future investigation and interim response activities pursuant to Michigan regulations.

In contrast to soil staging and decon area closures where unbiased grid samples are planned, the sample locations at River Access Sites will be biased to locations where impacts are most likely to be found. As such, this River Access Site work plan is not intended for larger or complex sites where more extensive sampling to determine the extent of impacts is indicated. However, none of the River Access Sites are large complex sites that require more extensive sampling.

The MDNRE's *Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (2002) provides general guidelines for application of biased or grid sampling strategies to verify soil remediation. The selection of biased or grid sampling is based on professional judgment considering

the size of the areas used for managing wastes or other hazardous substances, the volume of wastes managed and knowledge of the specific activities at the site.

Biased sampling is collection of soil sampling from areas most likely to be impacted. Biased sampling is generally appropriate for areas less than 0.25 acres and when there is sufficient knowledge of existing conditions, historic activities and field indicators to allow biased sampling locations to be selected. This is the situation for most river access sites where the use of the site is known and the areas used for managing wastes or other hazardous substances are known and are individually less than 0.25 acres. Such waste management uses at the river access sites typically were for roll off boxes, dumpsters, decontamination areas, light plant generators and fuel storage.

Grid sampling is generally appropriate where the areas are larger, activities were more complex and the areas used to manage wastes or other hazardous substances are not well defined, the volumes of wastes were large and historic activities are not as precisely documented.

### **Visual Impact Areas**

Samples will be collected from visually impacted areas (stained soil). Visual impacts for this purpose do not include stains or visual impacts that are related to the initial release of oil such as oiled river banks, tree trunks, logs, rocks and structures. Visual impacts are intended to include impacts related to site occupancy. At least one sample for every 100 square feet of stained soil will be collected after the visually impacted soil has been removed.

Visually impacted soil will be excavated prior to sampling and will be segregated and transported to the contaminated material staging area at a to-be-determined location where they will be prepared for subsequent disposal. All wastes generated during the Phase II SEI will be managed in accordance with the *Waste Treatment, Transportation and Disposal Plan* submitted on August 2, 2010 and revised on August 8, 2010.

Where soil removal occurs to address visual staining and sampling has already occurred the soil removal area will be immediately backfilled with a similar soil type and restored in a manner consistent to prevent inadvertent soil erosion or sedimentation of nearby water bodies. Field observations will be recorded and the limits of the soil removal area will be defined using GPS for potential future reference

## Former Storage Areas

Potential impact locations include but are not limited to the footprints of the following work areas and storage devices:

- Decontamination area
- Frac tanks
- Roll off boxes
- Dumpsters
- Fuel storage tanks
- Generators and waste oil tanks
- Boat ramps.

Storage areas for citrus-based cleaners and soil staining caused by citrus-based cleaners will not be sampled. Review of the MSDSs for the citrus-based cleaners indicates that the chemicals in the cleaners have no cleanup criteria.

Some general guidelines for the numbers and locations of samples follow; these are subject to professional judgment and field conditions.

- Footprints of decontamination areas. Collected at least one sample for every 100 square feet occupied by former decontamination areas. In general, locations on the downhill side of former decontamination areas are more likely to be impacted and will be preferentially sampled.
- Frac tanks. Collect two samples, each approximately 2 feet inside each end of the footprint of the frac tank.
- Roll off boxes. Collect two samples, each approximately 2 feet inside each end of the footprint of each roll off box.
- Dumpsters. Collect one sample from the lowest spot in the footprint of the dumpster.
- Fuel storage tanks. Collect one sample from the lowest spot in the footprint of the tank.
- Generators and waste oil tanks. Collect one sample from the lowest spot in the footprint of the generator or tank.
- Roadways and driveways leading to and from boat ramps. Collect one soil surface sample of the roadway or driveway where the surface is not concrete or asphalt.

The basis for the numbers and locations of samples will be documented in field logs.

### 3.3 Closure Schedule

The schedule for completing the Phase I SEE and Phase II SEI will vary for each site occupied as part of this project. It is anticipated that the Phase I SEE and limited Phase II SEI will occur through the end of 2010 for a majority of the sites. Some environmental evaluations may occur during the

winter months of January and February, 2011. Evaluations will resume in the spring of 2011, if necessary, to continue the SEE and SEI activities including potentially additional sampling of sites. It may also be necessary to document site reactivation activities at those River Access Sites that Enbridge chooses to reactivate. To accommodate this schedule, Enbridge has extended property leases at many River Access Sites. It is anticipated that some sites will be closed in 2010 and some sites will be closed in 2011. Those sites that are planned for use in 2011 will be winterized.

## 4.0 Data Evaluation

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Data collected in accordance with this Plan will be managed in accordance with the quality assurance and project plan (QAPP) submitted to MDNRE for approval and compared in tabulated format to Part 201 Soil Generic Residential Cleanup Criteria (as well as site-specific background concentrations for metals, should Enbridge decide to develop such criteria). If the analytical results are below the criteria for all of the randomly selected quadrants within a given grid, the location will be considered suitable for backfilling with clean material (if necessary), landscaping (if necessary) and final closure. If the reported data in one or more of the randomly selected quadrants within a grid exceed Part 201 Soil Cleanup Criteria, additional soil removal will be completed in that quadrant, and then the quadrant(s) will be re-sampled at the locations previously sampled. Should the follow-up concentrations be below Part 201 Cleanup Criteria, the gridded area will be considered suitable for backfilling with clean material (if necessary), landscaping (if necessary) and final closure.

## **5.0 Reporting**

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A final report will be prepared after all tasks outlined in this Plan for all identified sites are completed. The report will summarize field activities and will include analytical results in tables. In the report, analytical data tables and an evaluation of results in relation to Part 201 soil generic residential cleanup criteria, state default background levels and the U.S. EPA Region 5 Ecological Risk Screening Levels for soil will be presented. Figures will be included where appropriate. Information gathered during the Phase I SEE and Phase II SEI activities will be presented as well.

The report will be provided to U.S. EPA and MDNRE within five weeks of the completion of the work. The report will serve as the basis for developing recommendations for additional actions, if warranted.

## Figures



▲ Release Location  
--- Line 6B

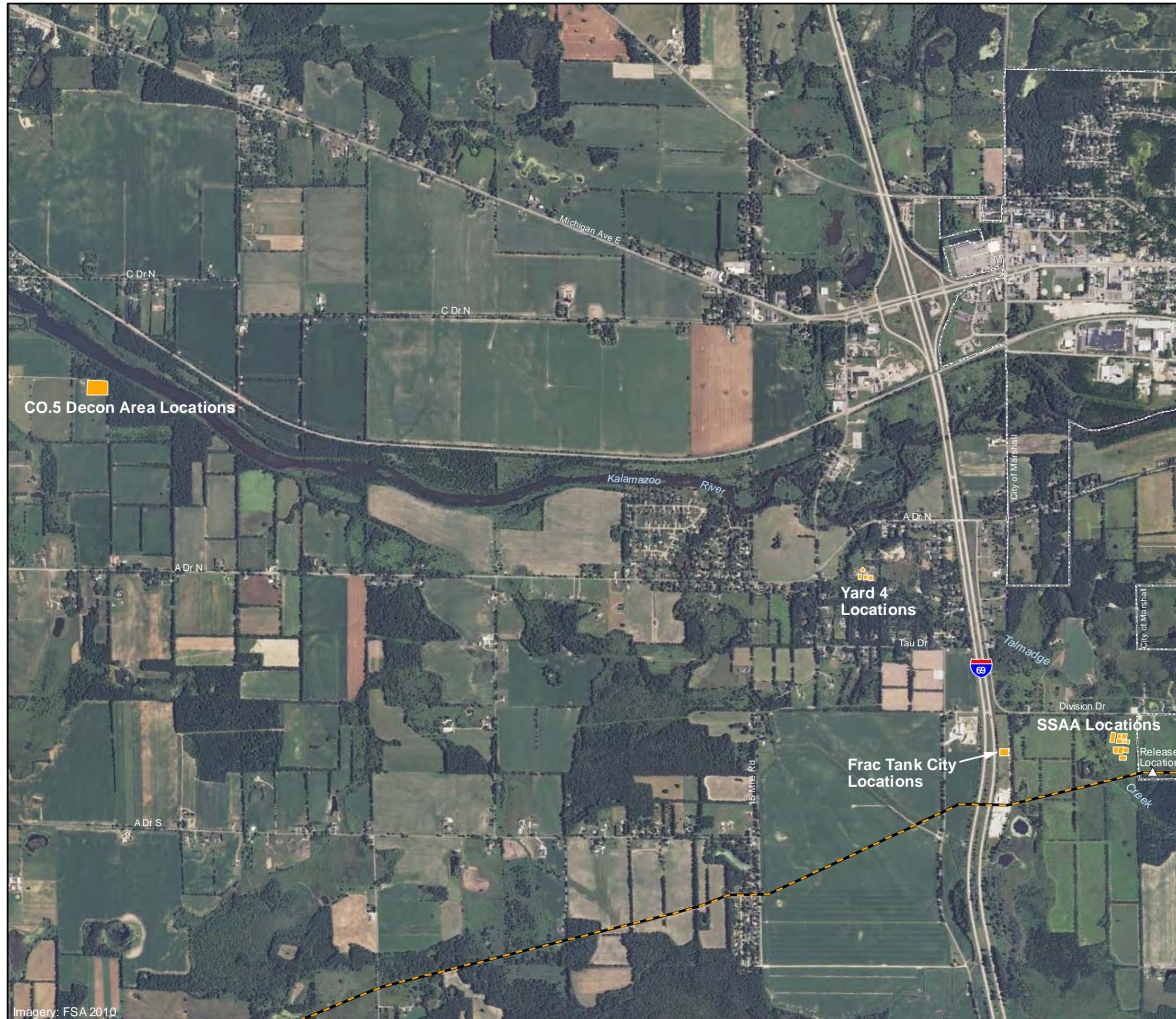


Feet  
500 0 500 1,000 1,500 2,000

Figure 1

SITE LOCATION  
Enbridge Line 6B MP608  
Pipeline Release  
Marshall, Michigan





-  Release Location
-  Line 6B
-  Soil Staging or Decon Area
-  City Boundary

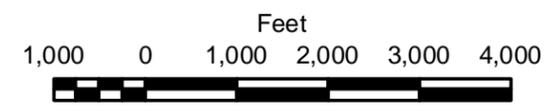
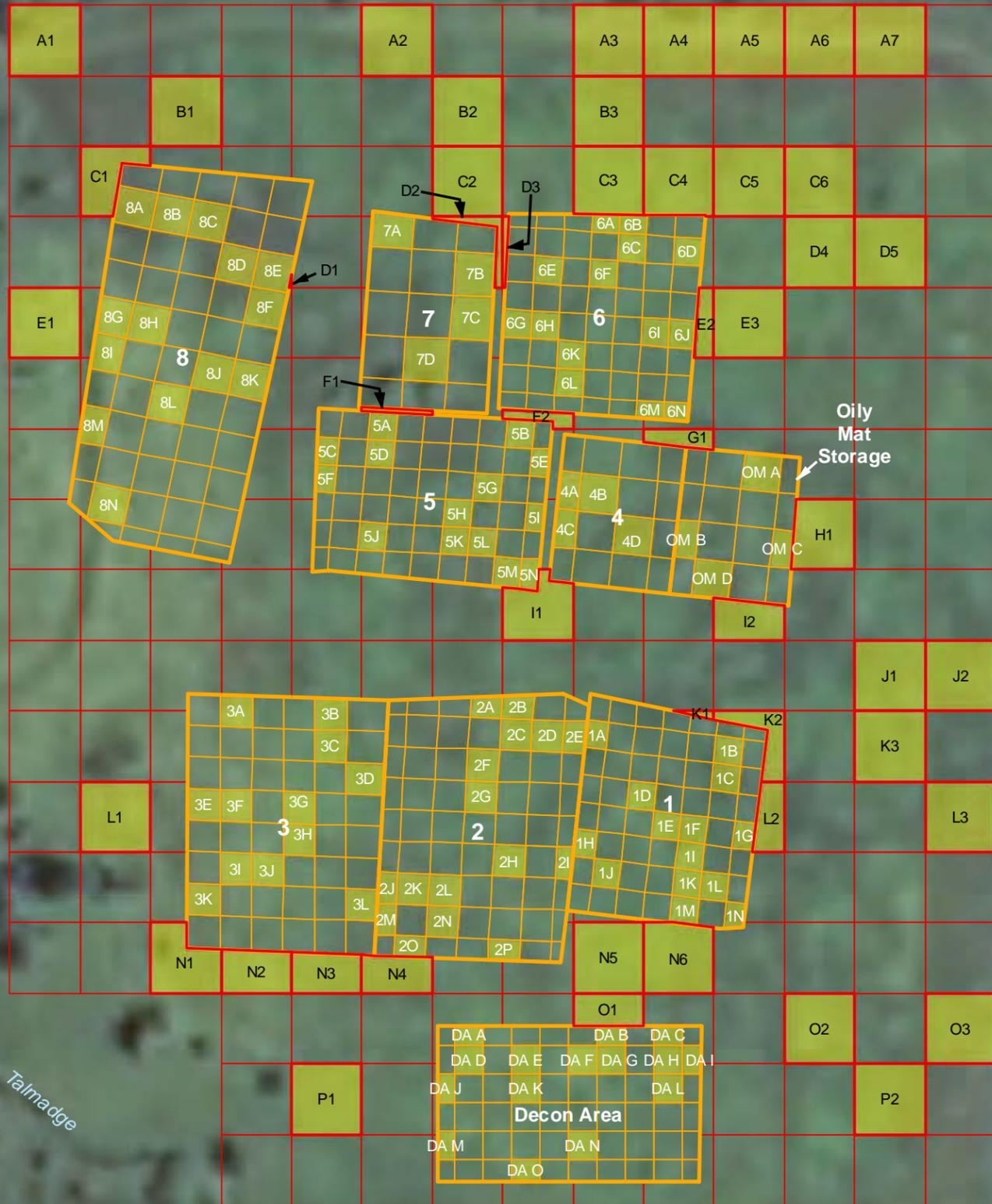


Figure 2  
 LOCATIONS OF SOIL STAGING AND  
 DECON AREAS  
 Enbridge Line 6B MP608  
 Pipeline Release  
 Marshall, Michigan





- Soil Staging Area
- Staging Area Quadrant
- SSAA Cell
- Staging Area Quadrant (25% Sample)
- SSAA Cell (25% Sample)
- City Boundary

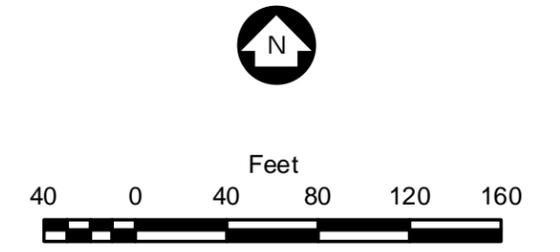


Figure 3  
 SSAA SAMPLE LOCATIONS  
 Enbridge Line 6B MP608  
 Pipeline Release  
 Marshall, Michigan





-  Soil Staging Area
-  Staging Area Quadrant
-  Staging Area Quadrant (25% Sample)
-  Yard 4 Cell
-  Yard 4 Cells (25% Sample)

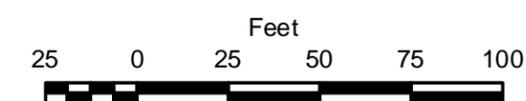
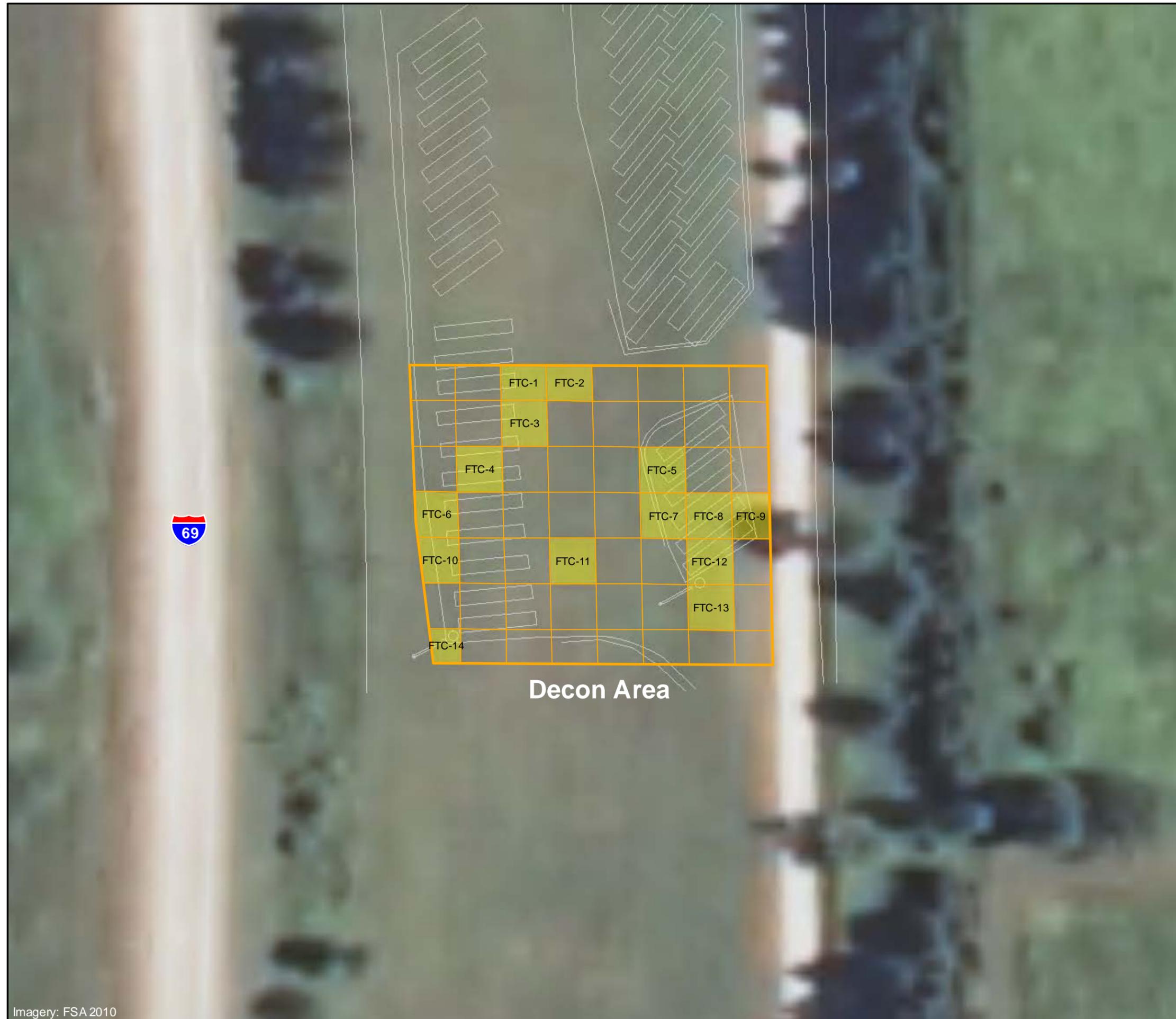


Figure 4

YARD 4 SAMPLE LOCATIONS  
 Enbridge Line 6B MP608  
 Pipeline Release  
 Marshall, Michigan





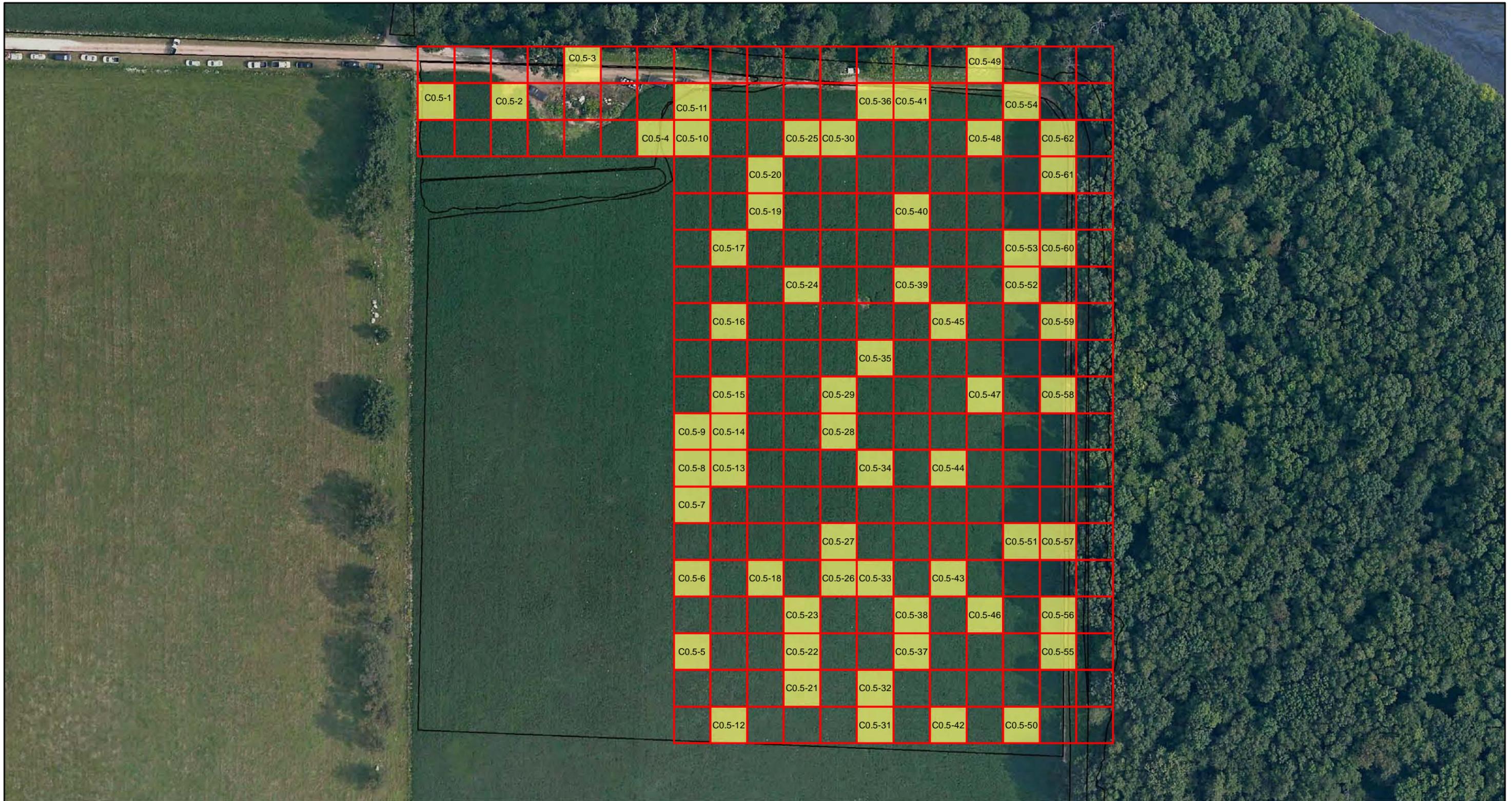
-  Soil Staging Area
-  Staging Area Quadrant
-  Staging Area Quadrant (25% Sample)



Figure 5

FRAC TANK CITY DECON AREA  
 SAMPLE LOCATIONS  
 Enbridge Line 6B MP608  
 Pipeline Release  
 Marshall, Michigan





- Legend**
- C0.5 Quadrant
  - C0.5 Quadrant (25% Sample)
  - Feature Outline

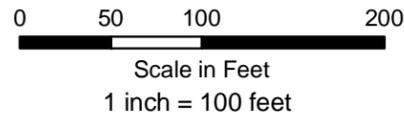
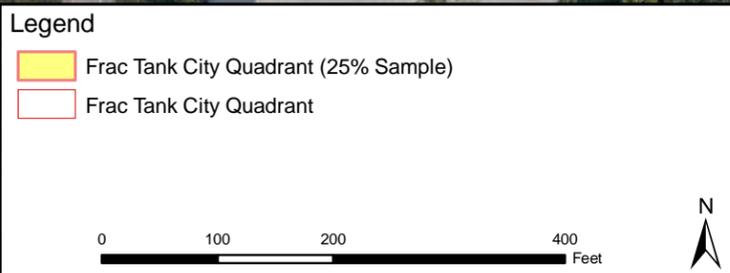


Figure 6  
 CO.5 DECON AREA  
 SAMPLE LOCATIONS  
 Enbridge Line 6B MP 608  
 Pipeline Release  
 Marshall, MI



Drawn:	BS	12/01/2010
Approved:	DL	12/01/2010
Project #:	60162778	



**Figure 7**  
**FTC SAMPLE LOCATIONS**  
 Enbridge Line 6B MP 608  
 Pipeline Release  
 Marshall, MI

Drawn:	BS	12/21/2010
Approved:	DL	12/21/2010
Project #:	60162778	



- Legend**
- Dredging Area Quadrant (25% Sample)
  - Dredging Area Quadrant
  - Feature Outline



**Figure 8**  
**SUBMERGED OIL DREDGING**  
**WASTEWATER TREATMENT &**  
**GEOTUBE AREA SAMPLE LOCATIONS**  
 Enbridge Line 6B MP 608  
 Pipeline Release  
 Marshall, MI



Drawn:	BS	12/21/2010
Approved:	DL	12/21/2010
Project #:	60162778	

## **Attachment A**

**Attachment A**  
**Line 6B; Marshall, MI**  
**List of River Access and Other Work Sites**

River Access Site Name	Milepost	Access Point	Tract	Estimated Number of Samples	Comment Nov. 29 Update
<b>Division C</b>					
C0.0 Parking	2.2	C0.0	KN-C-085	11	
C0.0	2.25	C0.0	TC-B-078		
C0.0	2.25	C0.0	TC-B-078.001		
Gildea	2.75	117 FRIENDSHIP LANE	KS-C-093	0	Boom tie-off only
Island Access	4.25		multiple	0	
C0.3	4.75	C0.3	KS-C-115	TBD	Site still in use
C0.4	5.1	12420 C Dr N	KN-C-094	4	
C0.5 Boom	5.4	C0.5	River	0	Is not a work site
C0.5 Boat Ramp	5.4	C0.5	KS-C-117	6	
C0.5 Decon	5.4	C0.5	KS-C-117	62	Maybe used in 2011
C0.5 Dredge Spoil	5.5	C0.5	KS-C-117	40	Gridded sampling
C1 Consumers Energy	5.8	C1	KS-C-123	19	
C1 Ceresco Power	5.8	C1	KS-C-124		
C1 Fowler access	5.8	C1	KN-C-110		
C1 Parking	5.8	C1	KS-C-127		
C1 Boom	6	C1	KN-C-113		
C1 Access	6	C1	KN-C-113		
C1 Descending Rt Bank	6.25	C1	KN-C-116		
C1.x Access	6.6	C1	KN-C-121	0	Site not used
C Driver Access	7.3	13858 11 Mile Road	KS-C131	0	Boom tie-off only
C1.5 Access	7.5	C1.5	KS-C-135	TBD	
C1.5 Parking	7.5	C1.5	KS-C-134		
C1.5 Ramp	7.5	C1.5	KS-C-132		
C2 Access	9.15	C2	KN-C-125	2	
C3 Access	9.4	C3	KN-C-125	8	
C3 Access	9.4	C3	KN-C127/128		
C3.2 Parking	9.8	C3.2	KS-C-156	TBD	
C3.2 Access/Ramp	9.85	C3.2	KS-C-156		
C3.7 Access	11.25	C3.7	KS-C-166	23	

**Attachment A**  
**Line 6B; Marshall, MI**  
**List of River Access and Other Work Sites**

River Access Site Name	Milepost	Access Point	Tract	Estimated Number of Samples	Comment Nov. 29 Update
Helispot H3.8	11.5	H3.8	unknown	0	
C3.x	11.8	2224 E Columbia Ave	KN-C-134	0	Site not used
C3.9	12.2	C3.9	KN-C-138	12	
C4	12.55	848 S Raymond Rd	KS-C-176	0	
C4	12.55	upstream of C-176	KS-C-174		
C4.8 River	13.25	C4.8	KS-C-182	0	
C4.8 Parking	13.25	C4.8	10-620-014-00		
C4.85	14	C4.85	KS-C-195	0	
C5	14.8	C5	KN-C-165/169	18	
C6	15.4	C6	KS-C-283	1	
C-vandenbrink	16.5	258 W Hamblin Ave	KS-C-304	0	Site not used
C-coppock	16.6	292 W Hamblin Ave	KS-C-305	0	Site not used
<b>Division D</b>					
D0.5	17.6	842 Jackson St W	city property	2	
D1 Sediment Curtain	18	898 Jackson St W	city property	9	
D2 Boat Ramp	18.7	1364 Jackson St W	city property	14	
D2.5 Access point	18.9	1502 Jackson St W	city property	25	
D3 Boat Ramp	19.4	1724 Jackson St W	city property	20	
D5 Boom Access	21.25	516 Custer Dr	road ROW	2	
D5NW (C&M Const.)	21.25			TBD	
<b>Division E</b>					
E0.1 Containment Access	24.6	1936 River Rd W	railroad ROW	0	CNL. Boom tie-off
E0.5 Gabion Baskets	26.4	E0.5	river access	TBD	
E0.5-2	26.8	E0.5	KN-E-344	0	Site not used
E0.5 Boom	26.9	E0.5	KN-E-347	19	
E0.5 Decon	26.9	E0.5	KN-E-347		
E0.5 Site Access	26.9	E0.5	KN-E-347		
E0.6 Containment access	28.2	15038 River Rd	KS-E-411	0	CNL
E0.8 Containment access	28.8	436 Michigan 96	road ROW	0	CNL
E1 Boom Access	29.4	Church St	KN-E-378	7	
E2 Boat Ramp	30	Fort Custer Rec Area	KS-E-431	16	
E2.3 Containment access	34.35	Climax Drive	KS-E-462	0	Boom tie-off only

**Attachment A**  
**Line 6B; Marshall, MI**  
**List of River Access and Other Work Sites**

<b>River Access Site Name</b>	<b>Milepost</b>	<b>Access Point</b>	<b>Tract</b>	<b>Estimated Number of Samples</b>	<b>Comment Nov. 29 Update</b>
E2.4 Containment access	34.55	11572 E Michigan Ave	KN-E-396	0	Boom tie-off only
E3 Boat Ramp/Boom	35.2	186 E Michigan Ave	KN-E-406	9	
E3.5 Containment access	36.55	S 35th St	road ROW	0	
E4 Ramp/Boom access	37.75	9424 E Michigan Ave	KN-E-424	19	
E4.5 Ramp	38.5	Plaza Avenue	unknown	TBD	
E5 Dam access	39.85	Consumers Power Dr	unknown	TBD	

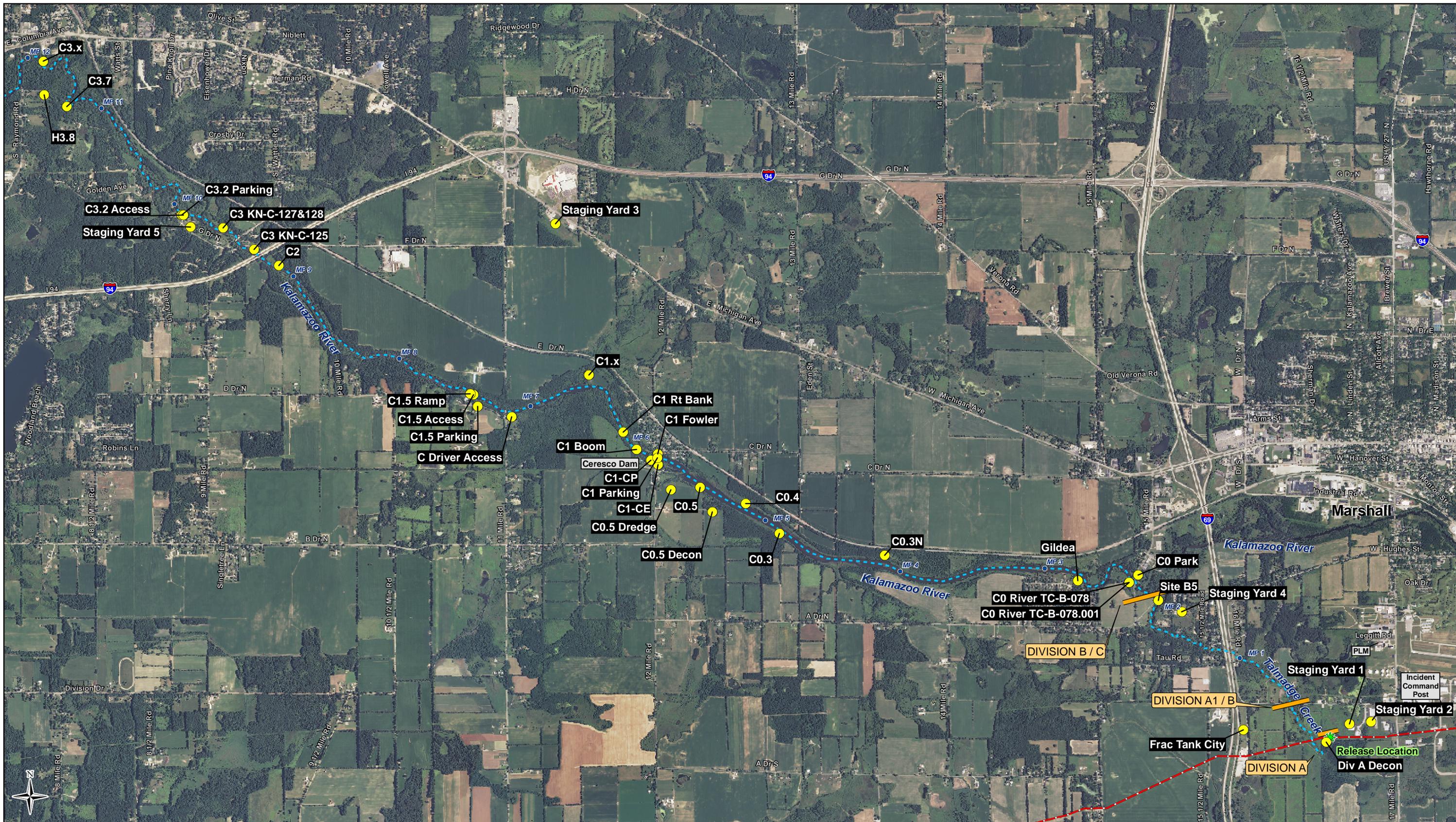
<b>Other Work Site Name</b>	<b>Milepost</b>	<b>Access Point</b>	<b>Tract</b>	<b>Estimated Number of Samples</b>	<b>Comment Nov. 29 Update</b>
Staging Yard 1	NA	NA	NA	0	For storage only
Staging Yard 2	NA	NA	NA	TBD	In use by Youngs
Staging Yard 3	NA	NA	NA	6	
Staging Yard 5	NA	C3.2	NA	TBD	To be used in 2011
B5	NA	NA	NA	0	Decon area – Enbridge Owned

TBD = to be determined.

CNL = could not locate.

The number of samples listed in the right-most column are approximate and may change as more information comes available.

## **Attachment B**



**Legend**

- Enbridge Pipeline
- - - River Centerline
- Division Boundary
- County Boundary
- Temporary Facility
- River Mile Point
- ✱ Release Location

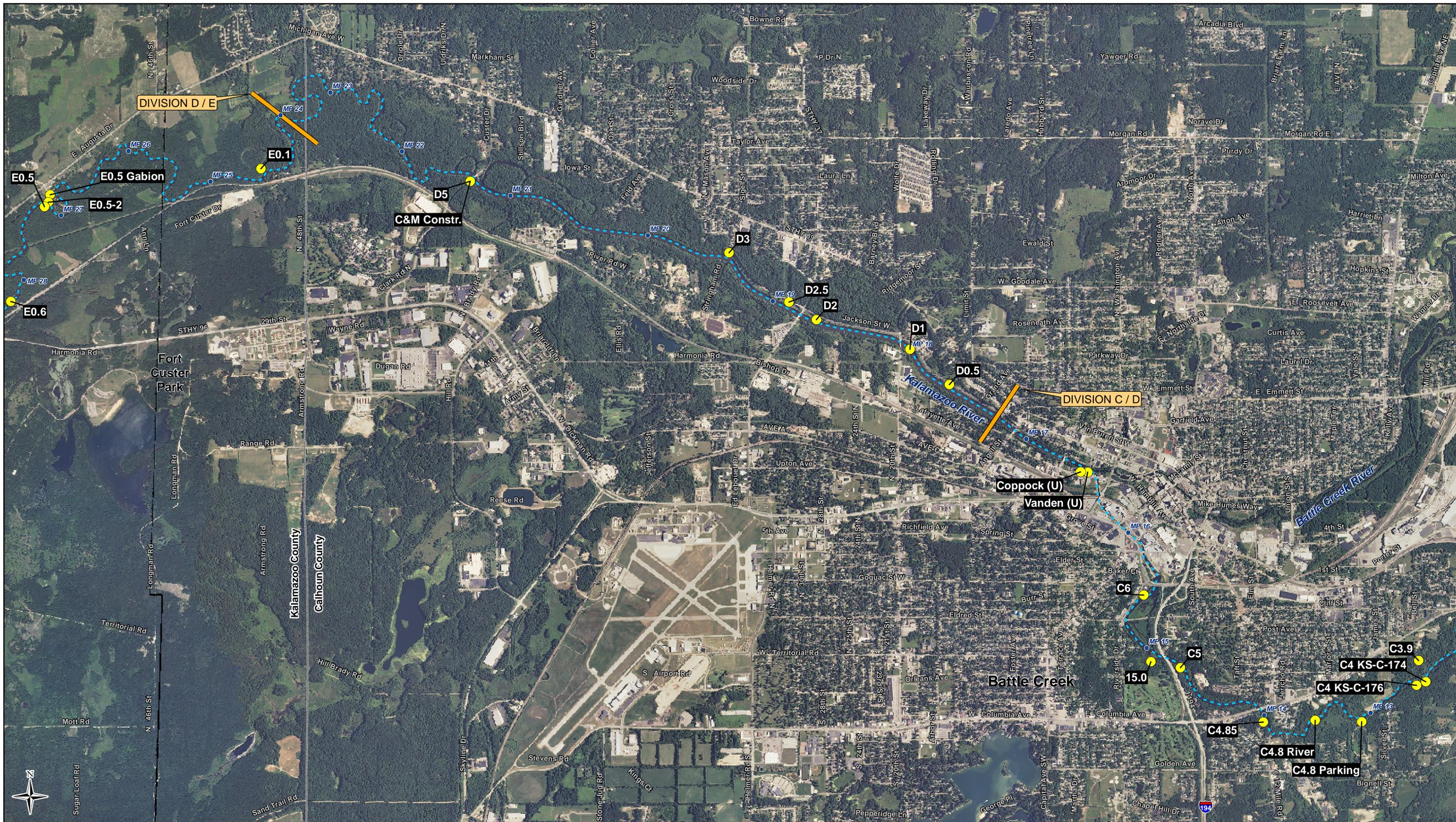
Enbridge Energy, Limited Partnership  
 Kalamazoo River / Enbridge Spill Recovery  
**Temporary Facility Restoration and Demobilization Plan**  
 Map 1 of 3



DATE ISSUED: Dec. 16, 2010  
 DATE REVISED:  
 SCALE: 1:19,000  
 DRAWN BY: JAI/NMS  
 SERIES: Temp. Facility R & D



**Natural Resources Engineering Co.**  
 715-395-5680



**Legend**

- Enbridge Pipeline
- River Centerline
- Division Boundary
- County Boundary
- Temporary Facility
- River Mile Point
- Release Location

Enbridge Energy, Limited Partnership  
**Kalamazoo River / Enbridge Spill Recovery**  
**Temporary Facility Restoration and Demobilization Plan**  
**Map 2 of 3**



DATE ISSUED: Dec. 16, 2010

DATE REVISED:

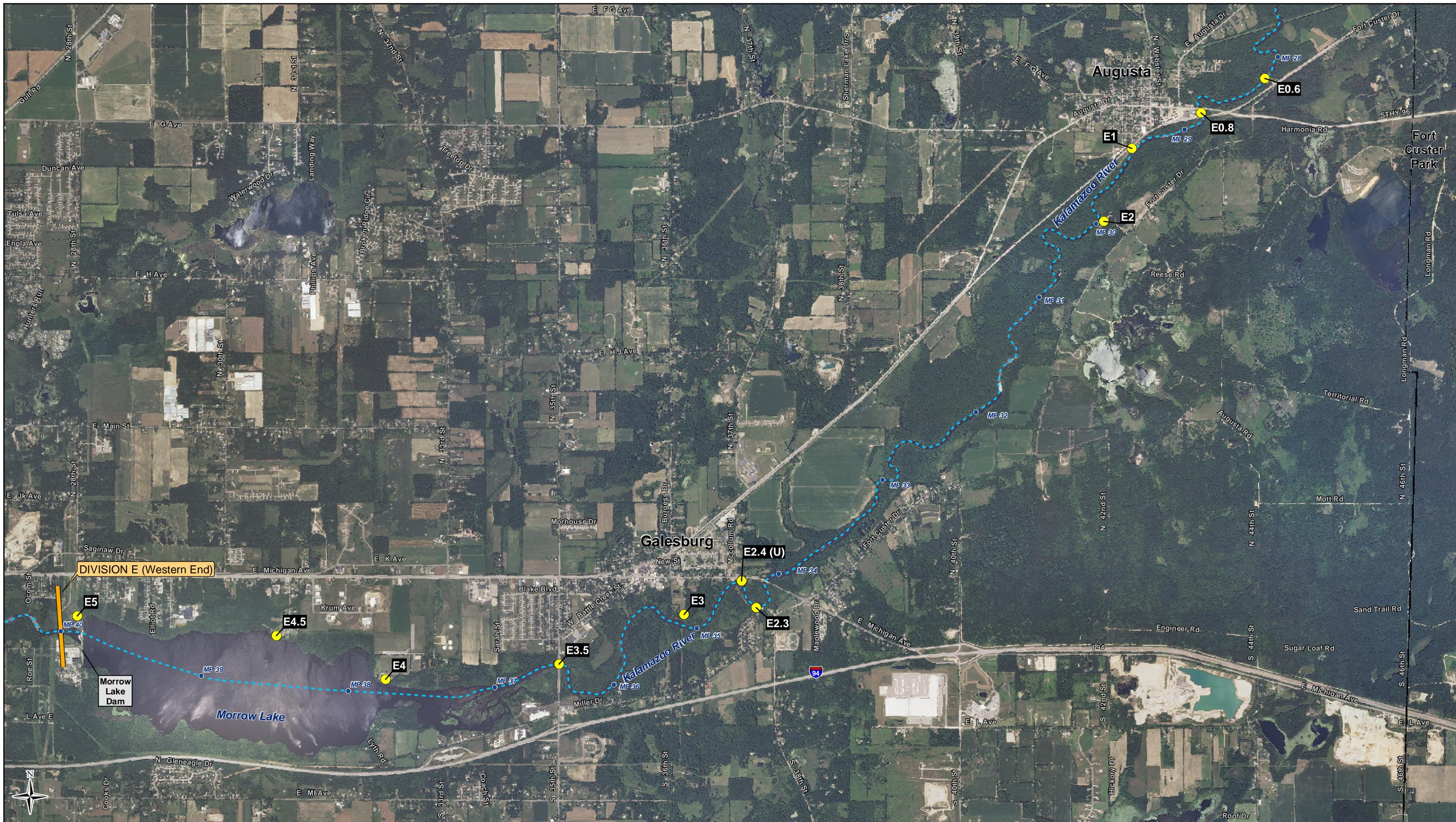
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DRAWN BY: JAI/NMS

SERIES: Temp. Facility R & D

**N**  
**R**atural  
**E**ngineering Co.  
 715-395-5680





**EN**atural  
Resources  
Engineering Co.  
715-395-5680

**Legend**

- Enbridge Pipeline
- River Centerline
- Division Boundary
- County Boundary
- Temporary Facility
- River Mile Point
- Release Location

Enbridge Energy, Limited Partnership  
Kalamazoo River / Enbridge Spill Recovery  
**Temporary Facility Restoration and Demobilization Plan**  
Map 3 of 3



DATE ISSUED: Dec. 16, 2010

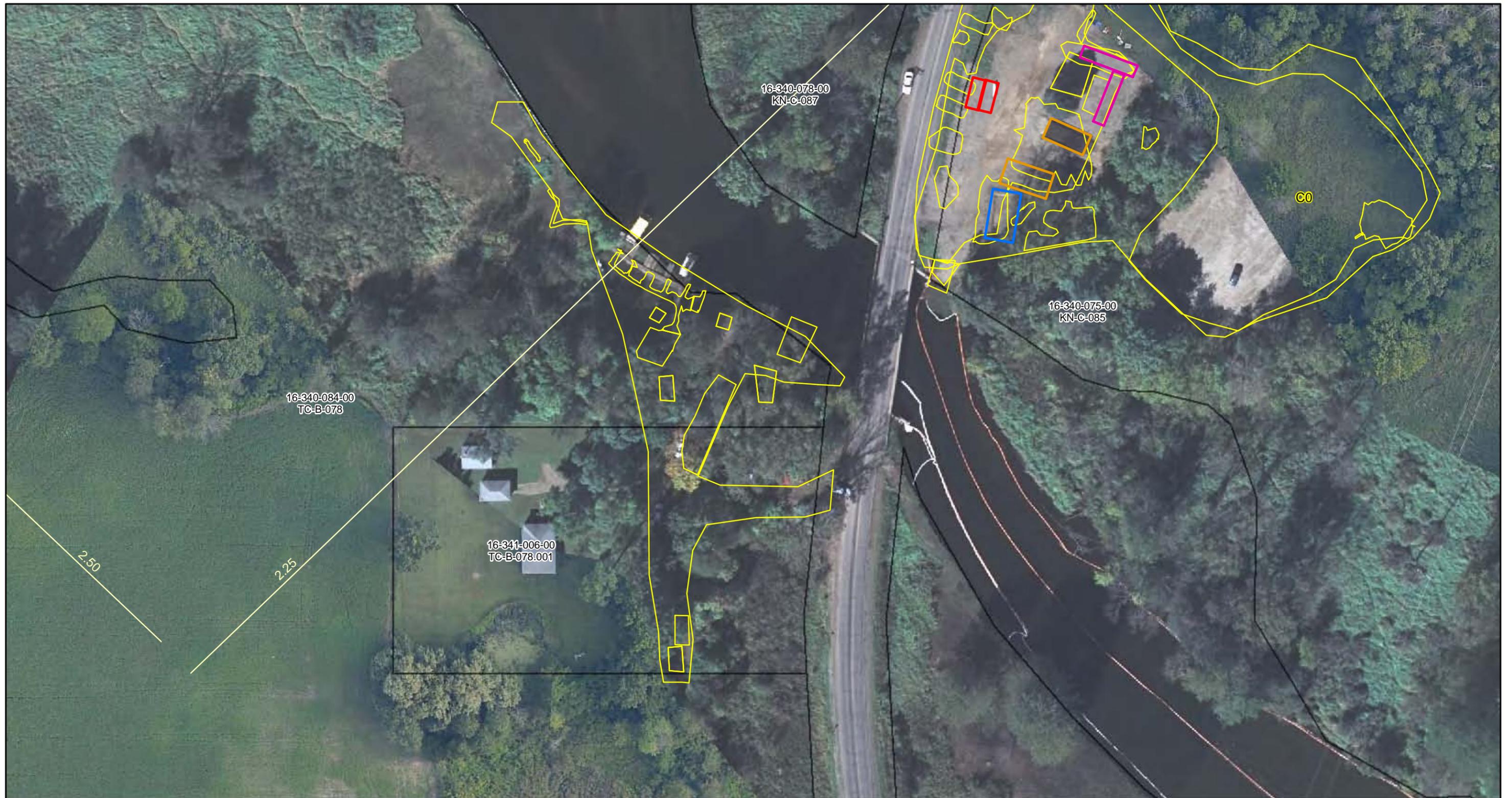
DATE REVISED:

SCALE: 1:19,000

DRAWN BY: JAI/NMS

SERIES: Temp. Facility R & D





Legend			
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Yellow outline	Feature Outline	Pink box	Frac Tank
Black outline	Parcels	Cyan box	Fuel Area
Black outline	AST	Purple box	Light Generator
Orange box	Decon Area	Red box	Roll Off
Blue box	Chemical Storage	Blue box	Storage Area
Blue box	Containment Area	Green box	Vac Truck



**Enbridge Energy**

**Site: C0**



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**

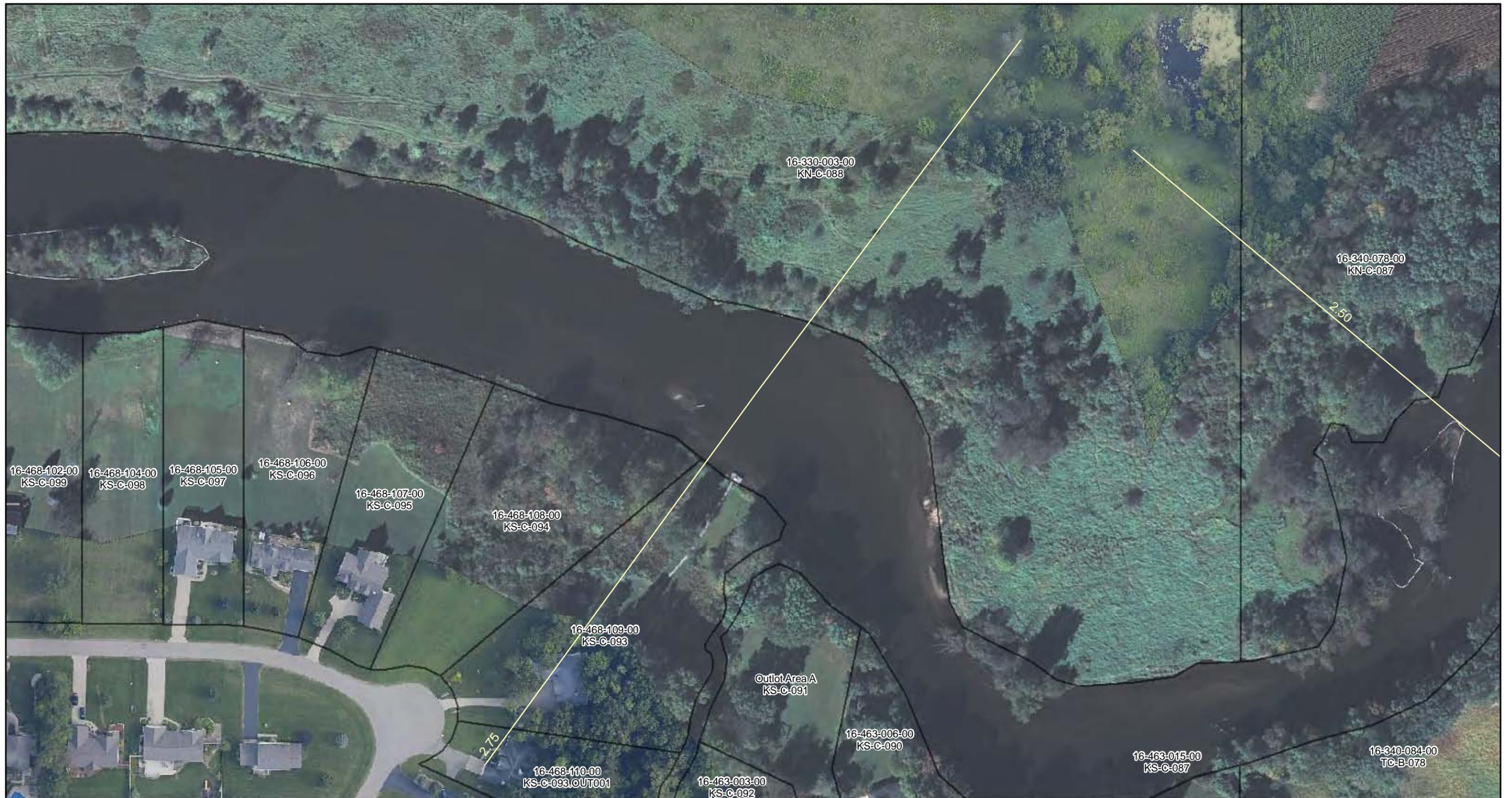
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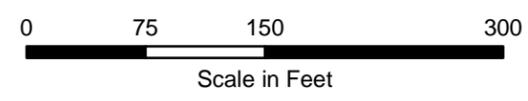
Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: Gildea**

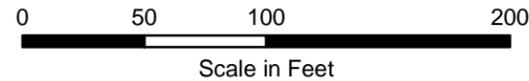


Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



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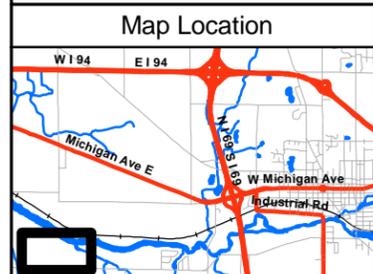
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: Island Access**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

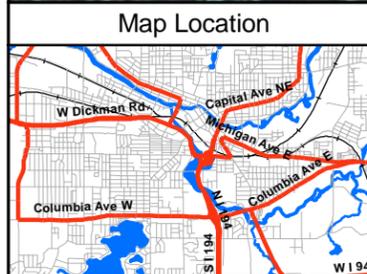
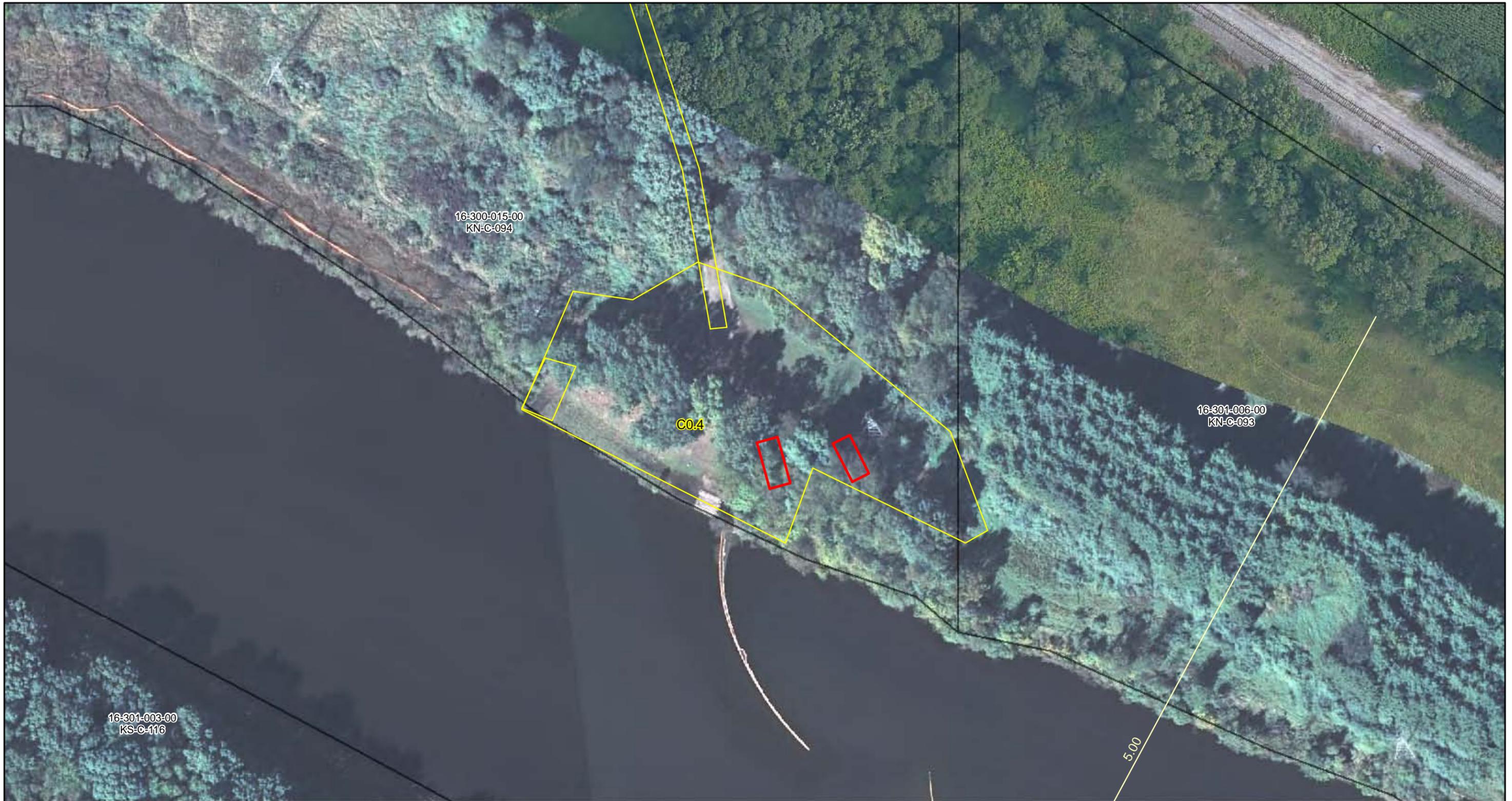
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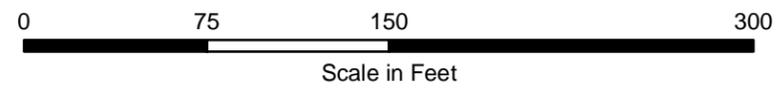
Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

Site: C0.4



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



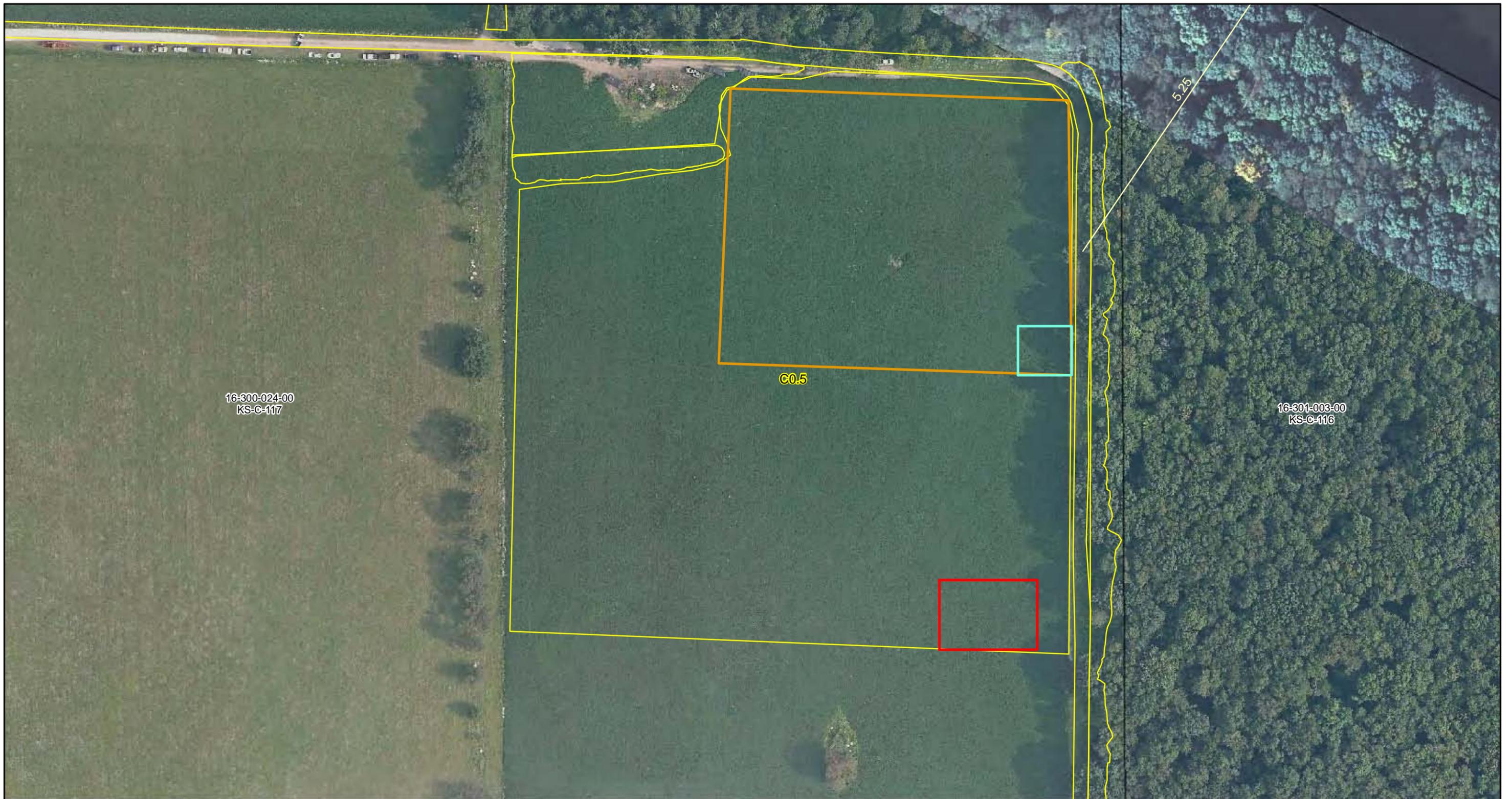
Legend	
Yellow line	Quarter Mile Grid Segments
Yellow outline	Feature Outline
Black outline	Parcels
Black outline	AST
Orange outline	Decon Area
Blue outline	Chemical Storage
Blue outline	Containment Area
Yellow outline	Equipment Storage
Pink outline	Frac Tank
Cyan outline	Fuel Area
Purple outline	Light Generator
Red outline	Roll Off
Blue outline	Storage Area
Green outline	Vac Truck



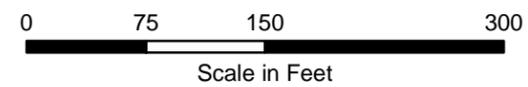
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**Site: C0.5**



Drawn: EC 1/5/2011  
Approved: BS 1/5/2011  
Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

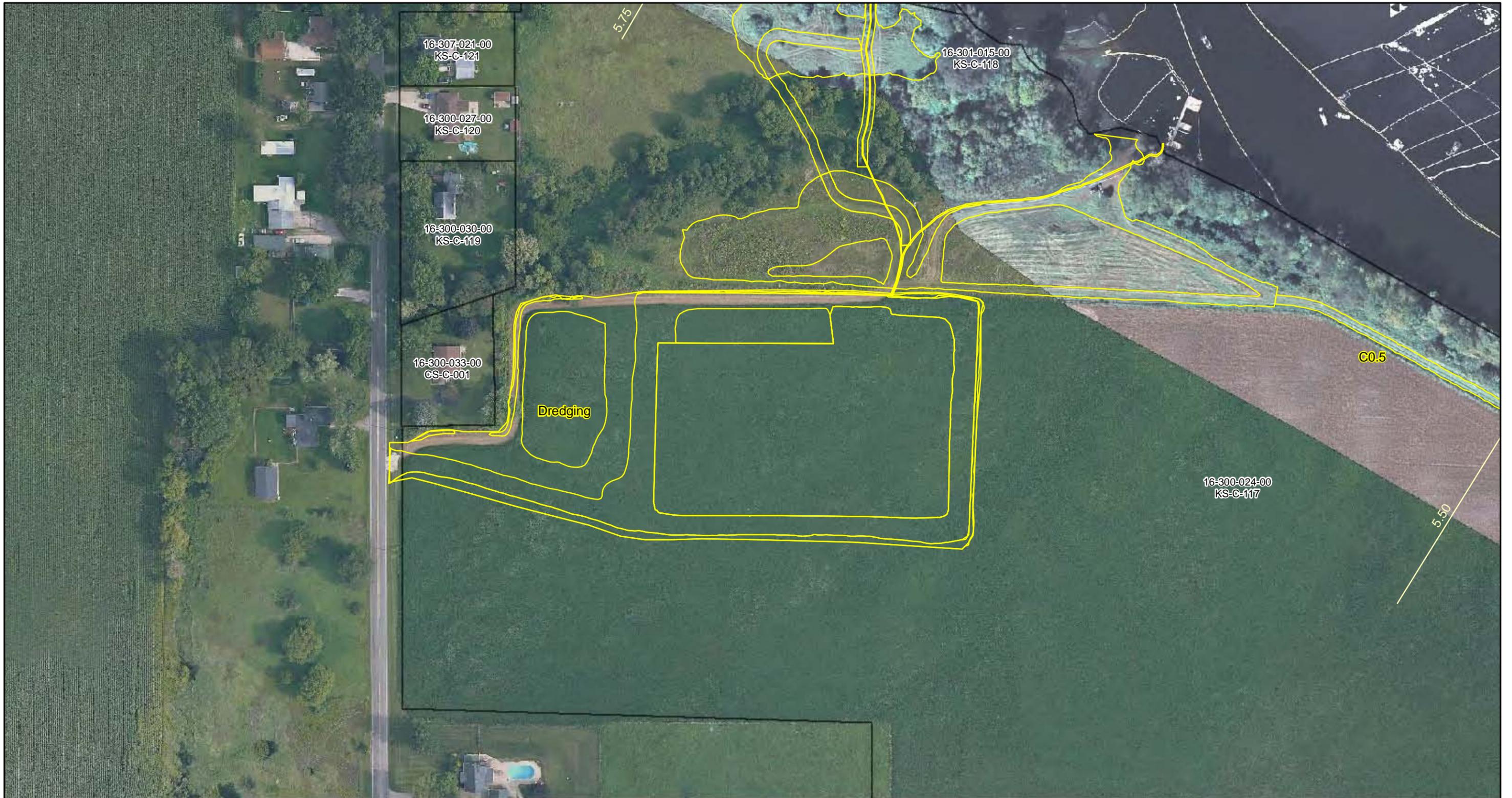
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Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



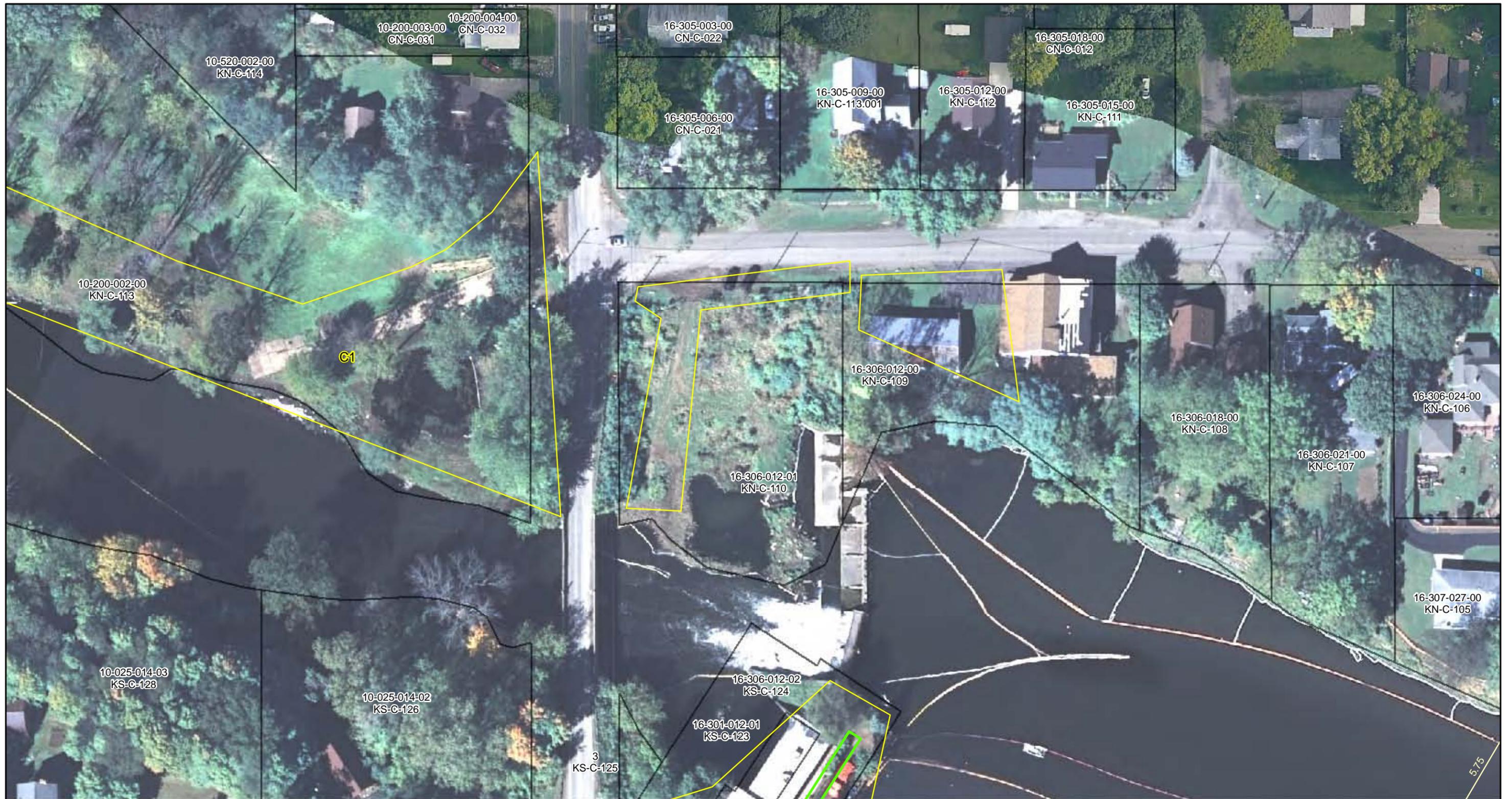
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- Quarter Mile Grid Segments
  - Feature Outline
  - Parcels



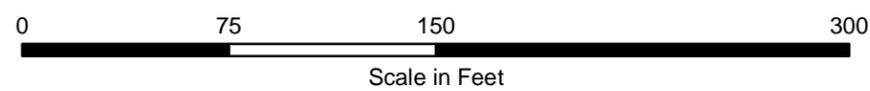
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**Site: C-0.5 Dredging Area**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



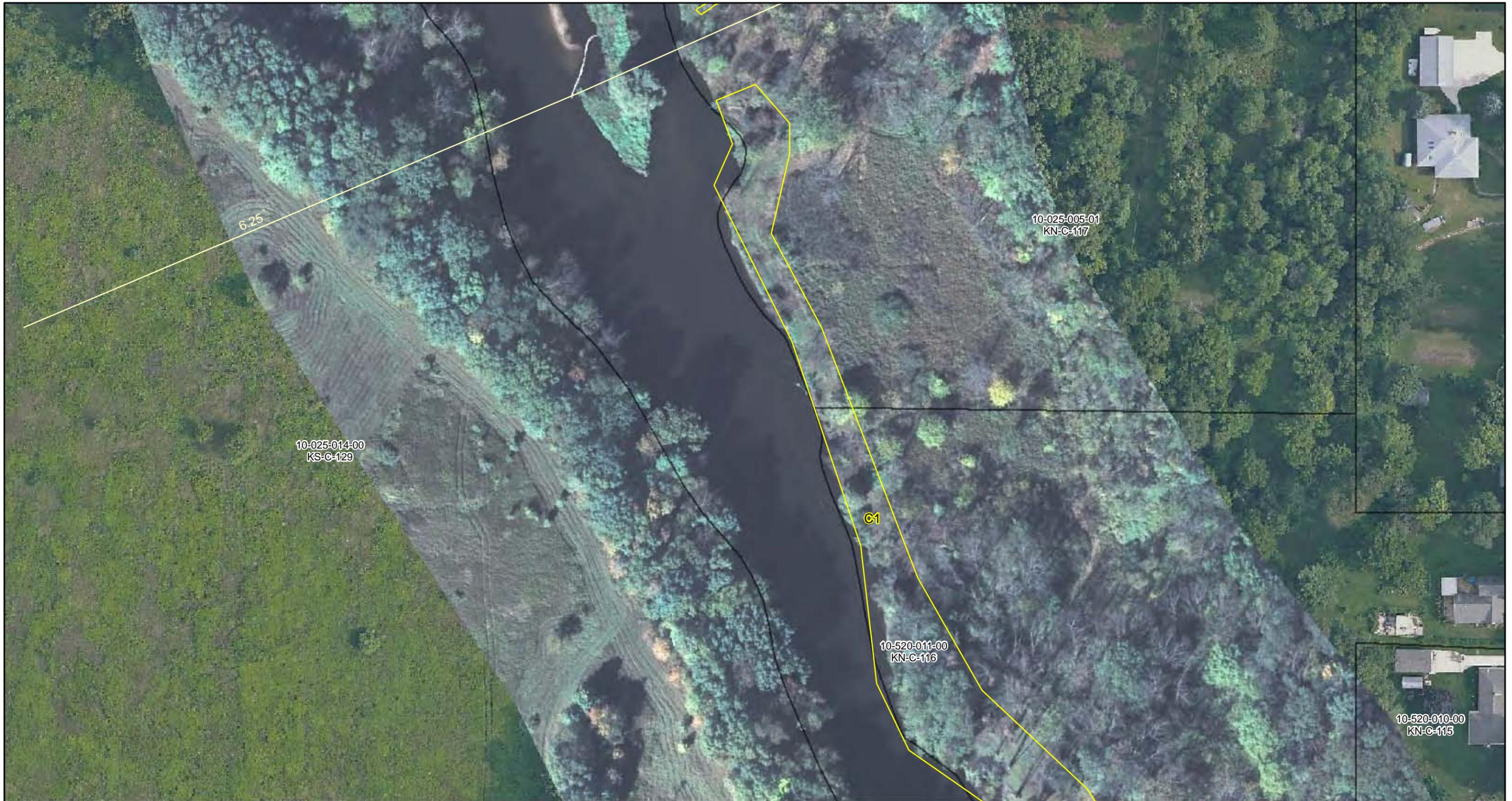
- Legend**
- Quarter Mile Grid Segments
  - Feature Outline
  - Parcels



**Enbridge Energy**  
**Site: C1**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



- Legend**
- Quarter Mile Grid Segments
  - Feature Outline
  - Parcels



**Enbridge Energy**

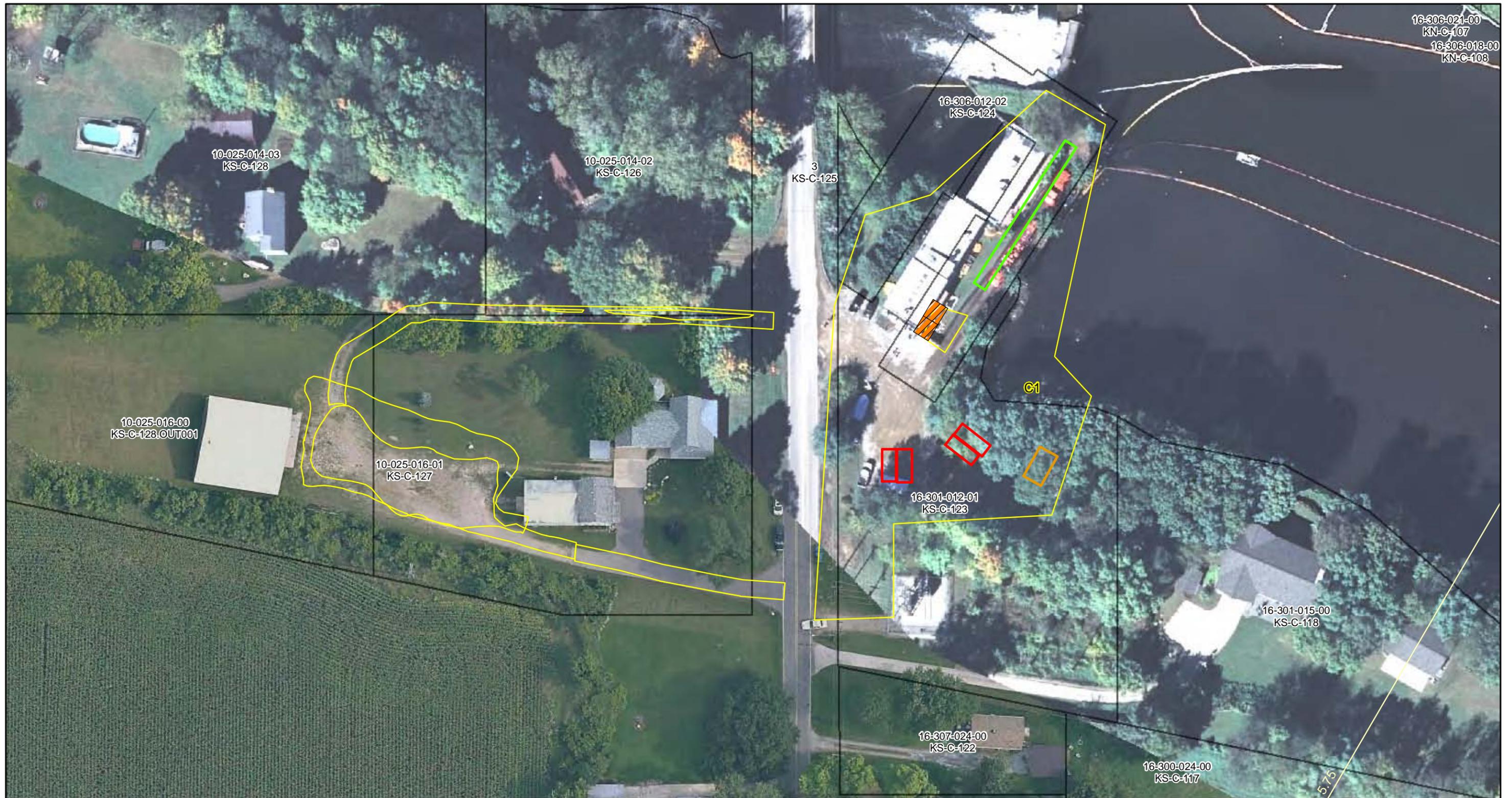
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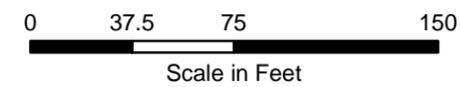
Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: C1**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	

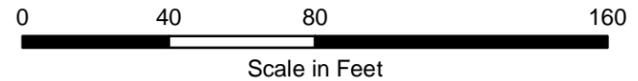


10-024-001-00  
KN-C-121

C1.X



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

Site: C-1.X



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: C Driver Access**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



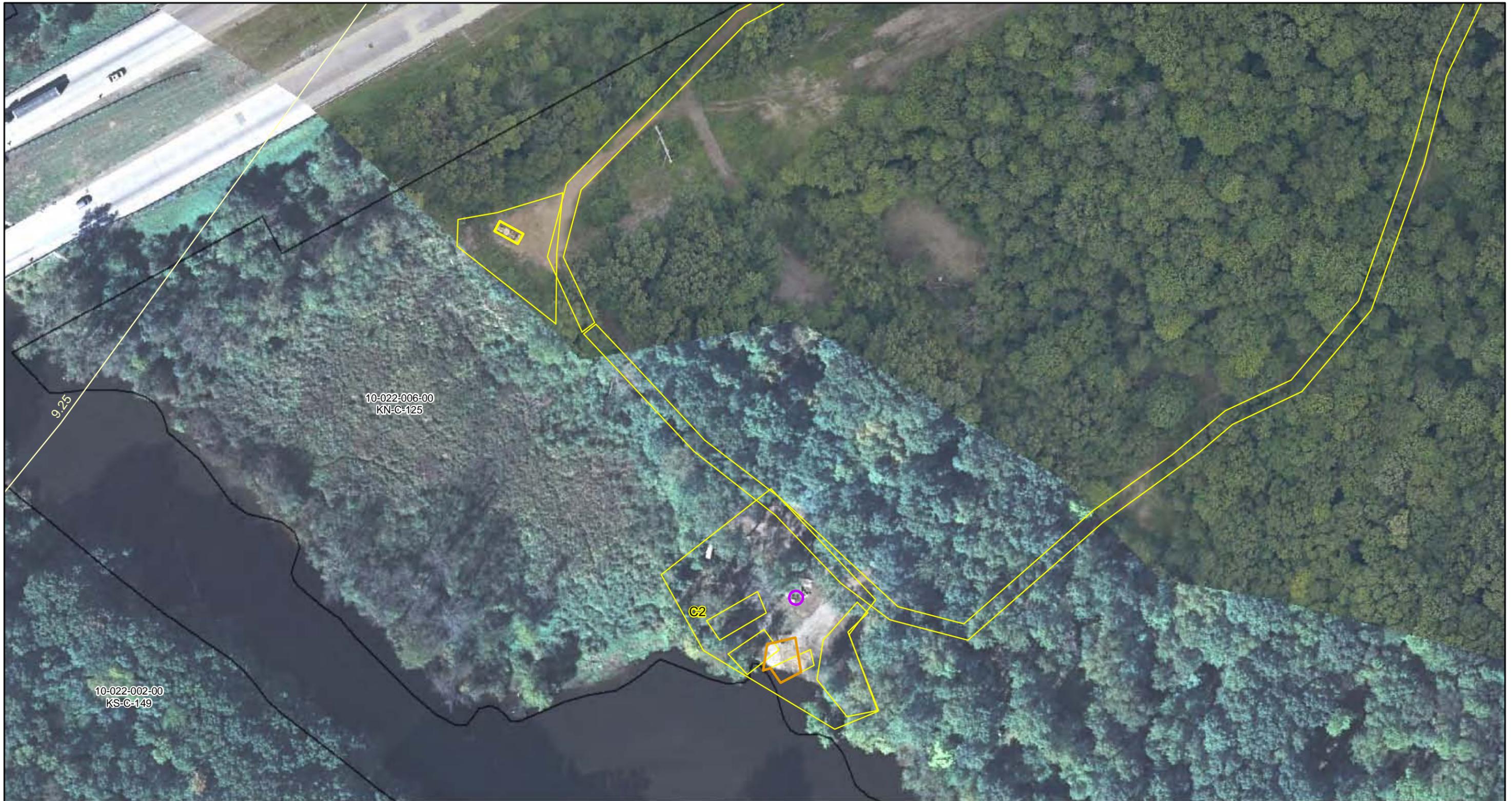
Legend			
Yellow line	Quarter Mile Grid Segments	Yellow rectangle	Equipment Storage
Yellow outline	Feature Outline	Pink rectangle	Frac Tank
Thin black line	Parcels	Cyan rectangle	Fuel Area
Thick black line	AST	Purple rectangle	Light Generator
Orange rectangle	Decon Area	Red rectangle	Roll Off
Blue rectangle	Chemical Storage	Blue rectangle	Storage Area
Blue outline	Containment Area	Green rectangle	Vac Truck



**Enbridge Energy**  
**Site: C1.5**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Yellow line	Quarter Mile Grid Segments
Yellow outline	Feature Outline
Black outline	Parcels
Black outline	AST
Orange outline	Decon Area
Orange diagonal lines	Chemical Storage
Blue outline	Containment Area
Yellow rectangle	Equipment Storage
Pink rectangle	Frac Tank
Cyan rectangle	Fuel Area
Purple rectangle	Light Generator
Red rectangle	Roll Off
Blue rectangle	Storage Area
Green rectangle	Vac Truck



Enbridge Energy

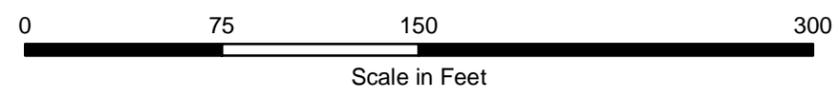
Site: C2



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Yellow line	Quarter Mile Grid Segments
Yellow outline	Feature Outline
Black outline	Parcels
Black outline	AST
Orange outline	Decon Area
Orange diagonal lines	Chemical Storage
Blue outline	Containment Area
Yellow fill	Equipment Storage
Pink fill	Frac Tank
Cyan fill	Fuel Area
Purple fill	Light Generator
Red fill	Roll Off
Blue fill	Storage Area
Green fill	Vac Truck



**Enbridge Energy**

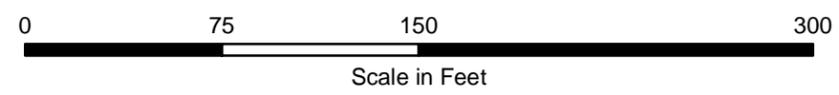
**Site: C3**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend			
Yellow line	Quarter Mile Grid Segments	Yellow box	Equipment Storage
Thin black line	Feature Outline	Pink box	Frac Tank
Thin black line	Parcels	Cyan box	Fuel Area
Thick black line	AST	Purple box	Light Generator
Orange box	Decon Area	Red box	Roll Off
Hatched orange box	Chemical Storage	Blue box	Storage Area
Blue box	Containment Area	Green box	Vac Truck



**Enbridge Energy**  
**Site: C3**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Yellow outline	Quarter Mile Grid Segments
Yellow outline	Feature Outline
Black outline	Parcels
Black outline	AST
Orange outline	Decon Area
Orange diagonal lines	Chemical Storage
Blue outline	Containment Area
Yellow outline	Equipment Storage
Pink outline	Frac Tank
Cyan outline	Fuel Area
Purple outline	Light Generator
Red outline	Roll Off
Blue outline	Storage Area
Green outline	Vac Truck



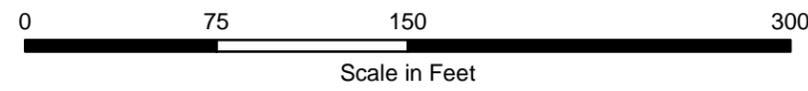
**Enbridge Energy**  
**Site: C3.2**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend			
Yellow line	Quarter Mile Grid Segments	Yellow rectangle	Equipment Storage
Yellow outline	Feature Outline	Pink rectangle	Frac Tank
Black outline	Parcels	Cyan rectangle	Fuel Area
Black outline	AST	Purple rectangle	Light Generator
Orange rectangle	Decon Area	Red rectangle	Roll Off
Blue rectangle	Chemical Storage	Blue rectangle	Storage Area
Blue outline	Containment Area	Green rectangle	Vac Truck



**Enbridge Energy**  
**Site: C3.7**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

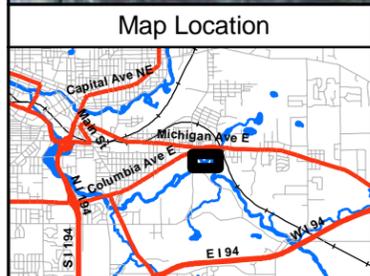
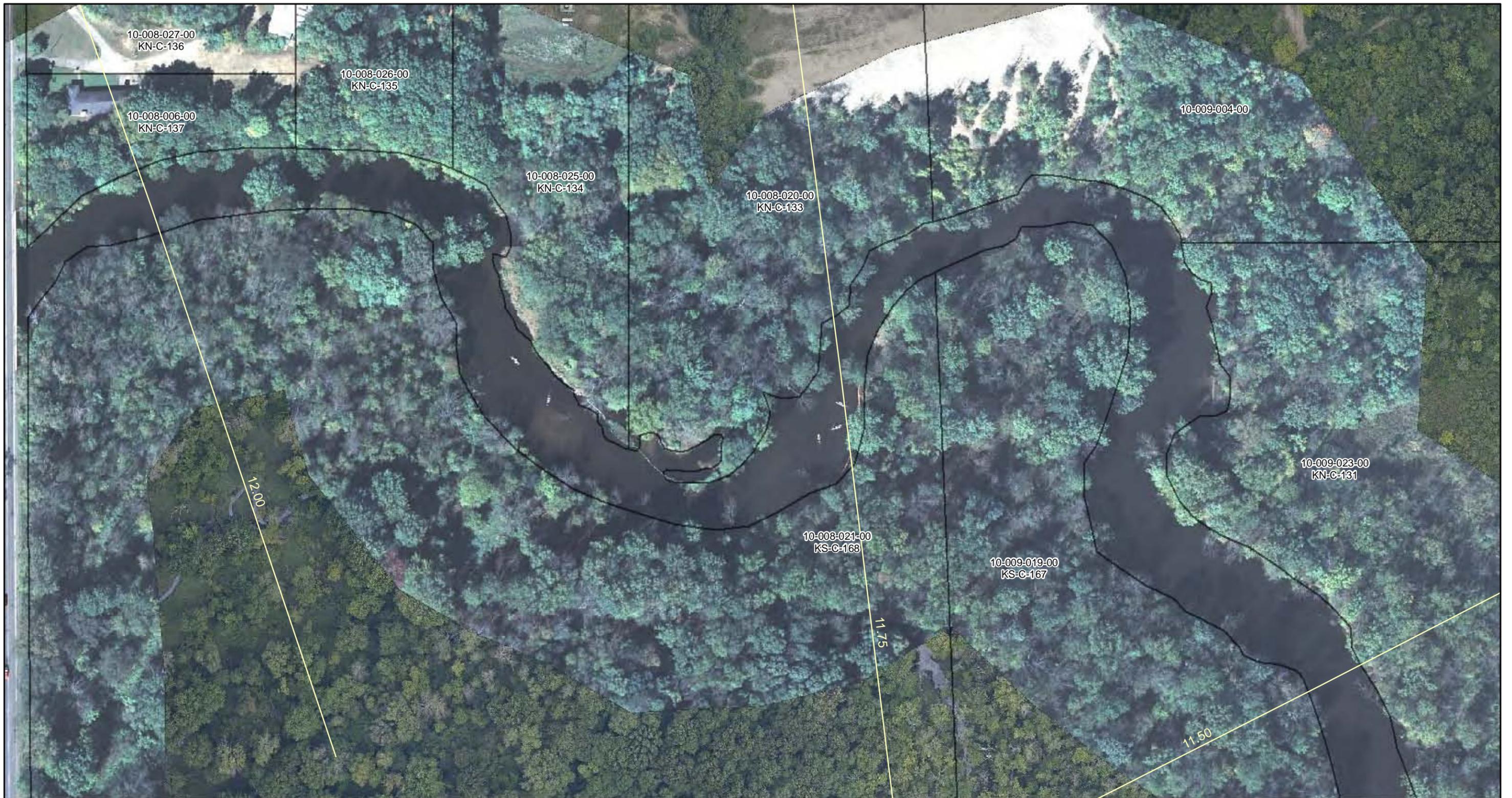
Site: H3.8



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**

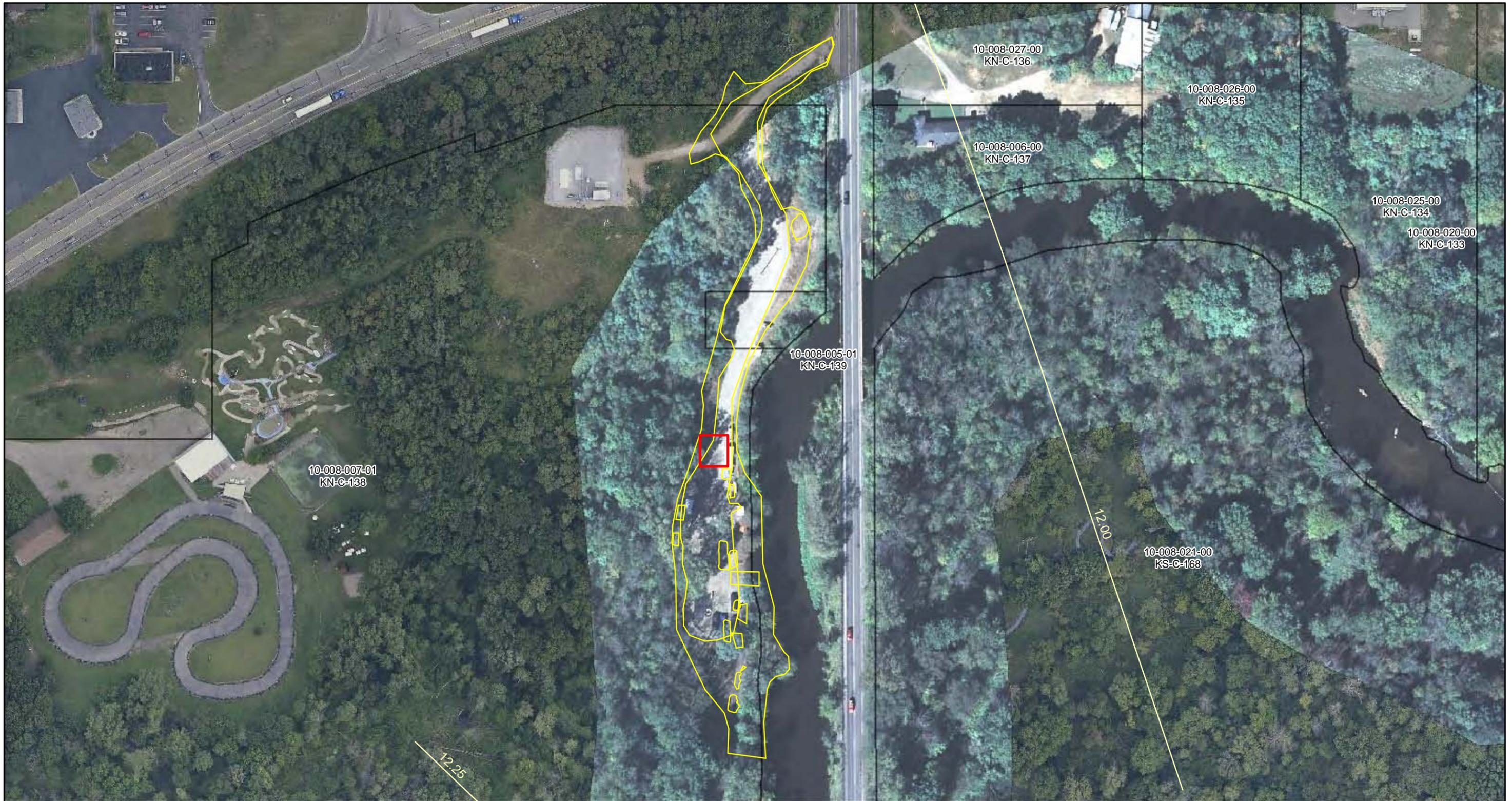
**Site: C3.X**



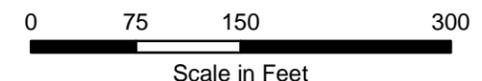
Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Yellow outline	Quarter Mile Grid Segments
White outline	Feature Outline
Black outline	Parcels
Black outline	AST
Orange outline	Decon Area
Blue outline	Chemical Storage
Blue outline	Containment Area
Yellow outline	Equipment Storage
Pink outline	Frac Tank
Cyan outline	Fuel Area
Purple outline	Light Generator
Red outline	Roll Off
Blue outline	Storage Area
Green outline	Vac Truck

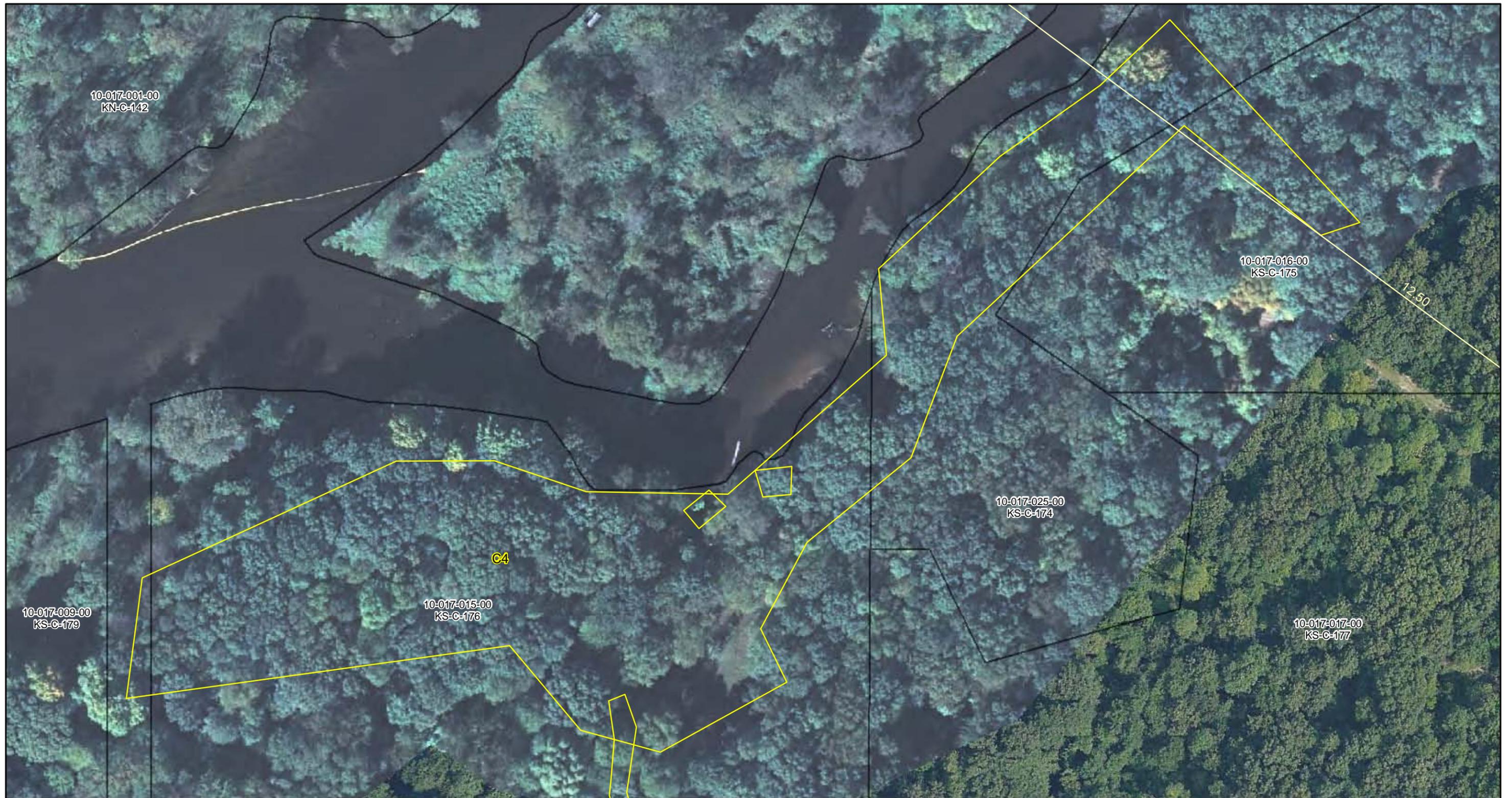


**Enbridge Energy**

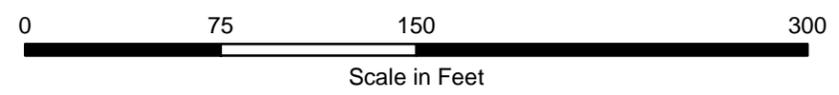
**Site: C3.9**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: C4**

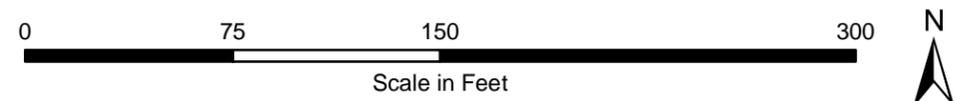


Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	





Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**

**Site: C4.85**

Drawn: EC	1/5/2011
Approved: EC	1/5/2011
Project #:	60162778



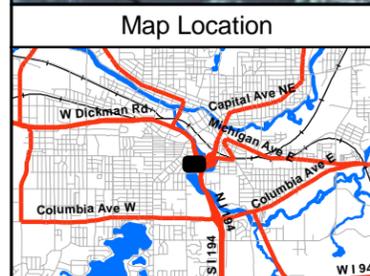
Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



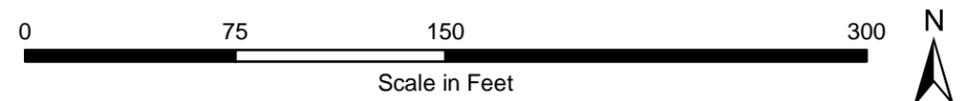
**Enbridge Energy**  
**Site: C5**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend			
Yellow line	Quarter Mile Grid Segments	Yellow box	Equipment Storage
Yellow outline	Feature Outline	Pink box	Frac Tank
Black outline	Parcels	Cyan box	Fuel Area
Black outline	AST	Purple box	Light Generator
Orange box	Decon Area	Red box	Roll Off
Orange hatched box	Chemical Storage	Blue box	Storage Area
Blue box	Containment Area	Green box	Vac Truck



**Enbridge Energy**  
**Site: C6**

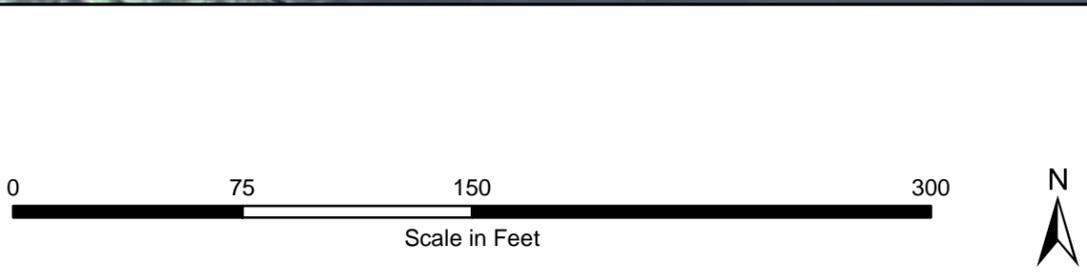
Drawn:	EC 1/5/2011
Approved:	EC 1/5/2011
Project #:	60162778





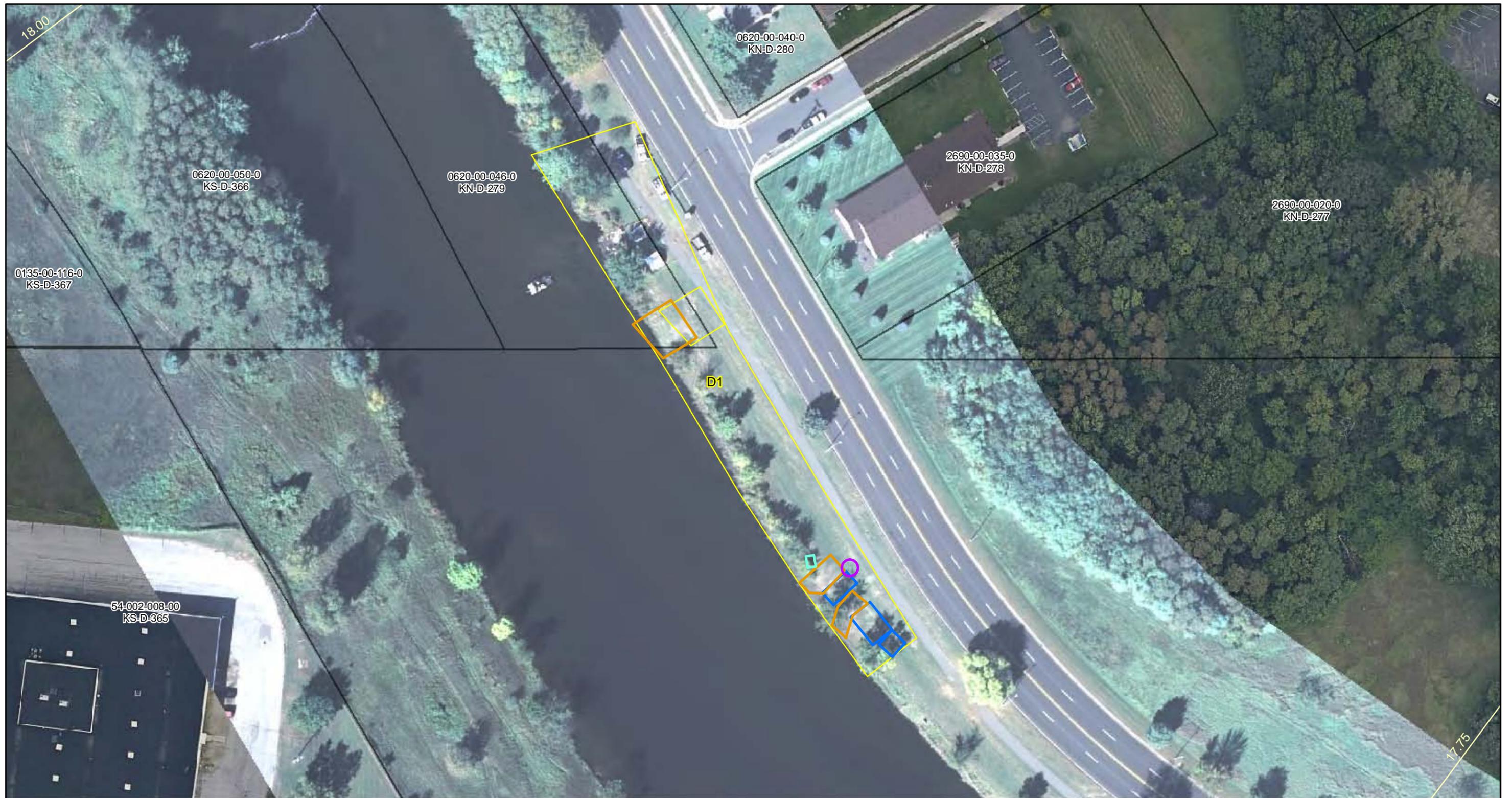
**Legend**

Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck

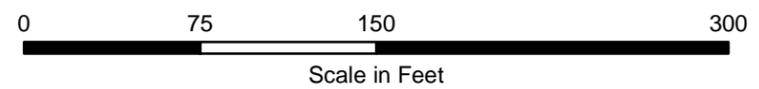


**Enbridge Energy**  
**Site: D0.5**

Drawn: EC	1/5/2011
Approved: EC	1/5/2011
Project #:	60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**

**Site: D1**



Drawn: EC 1/5/2011

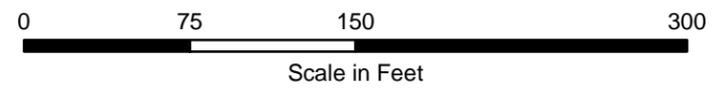
Approved: EC 1/5/2011

Project #: 60162778





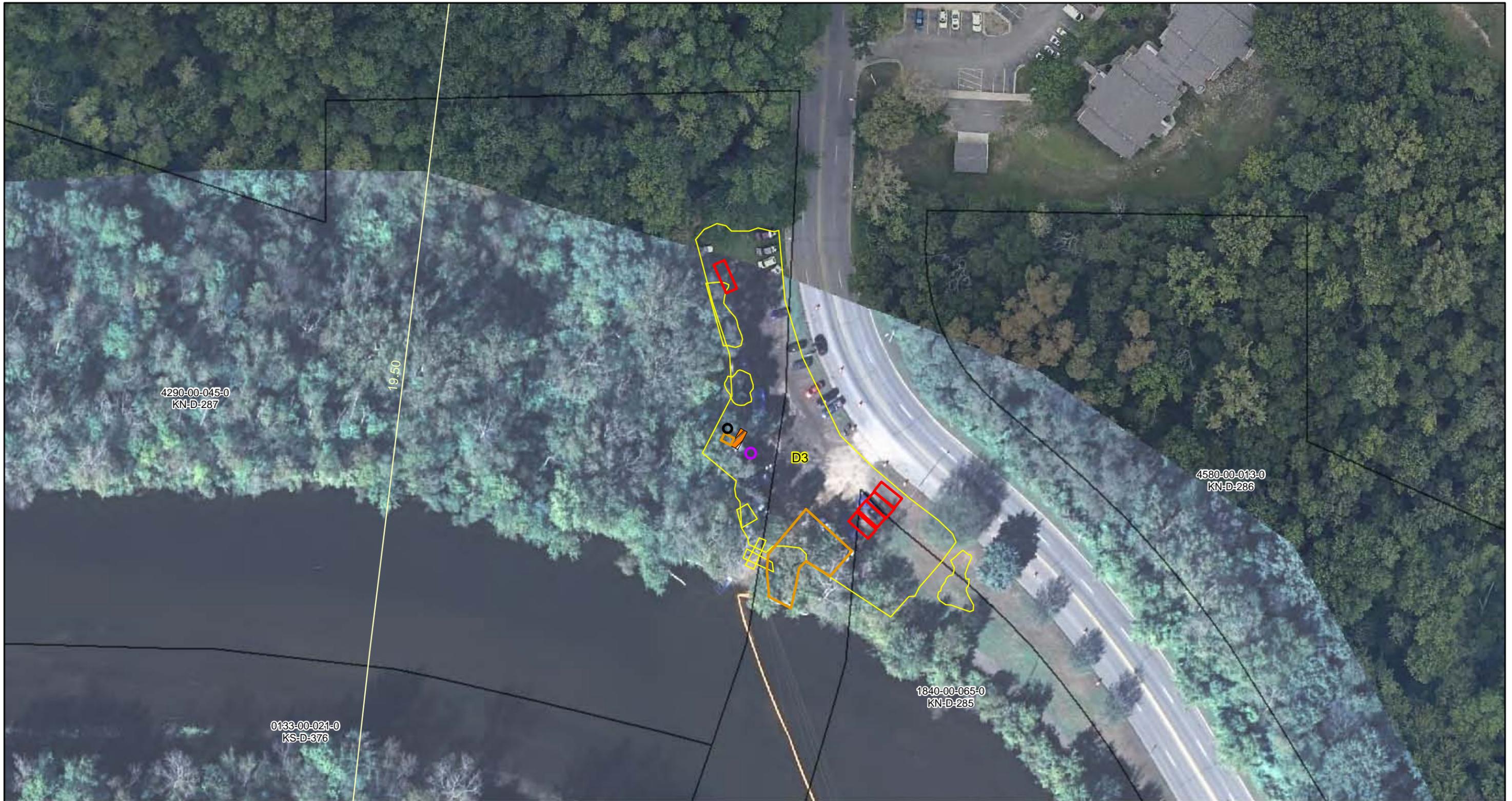
Legend	
Yellow outline	Quarter Mile Grid Segments
Yellow rectangle	Equipment Storage
Pink rectangle	Frac Tank
Cyan rectangle	Fuel Area
Purple rectangle	Light Generator
Red rectangle	Roll Off
Blue rectangle	Storage Area
Green rectangle	Vac Truck
Black outline	Parcels
Black outline	AST
Orange rectangle	Decon Area
Blue rectangle	Chemical Storage
Blue rectangle	Containment Area



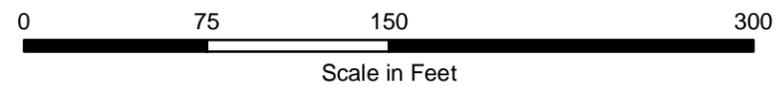
**Enbridge Energy**  
**Site: D2.5**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend			
Yellow line	Quarter Mile Grid Segments	Yellow rectangle	Equipment Storage
Yellow outline	Feature Outline	Pink rectangle	Frac Tank
Black outline	Parcels	Cyan rectangle	Fuel Area
Black outline	AST	Purple rectangle	Light Generator
Orange rectangle	Decon Area	Red rectangle	Roll Off
Orange diagonal lines	Chemical Storage	Blue rectangle	Storage Area
Blue rectangle	Containment Area	Green rectangle	Vac Truck



**Enbridge Energy**

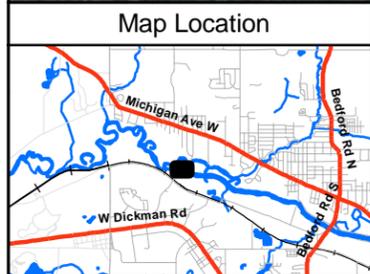
**Site: D3**



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

Site: D5



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



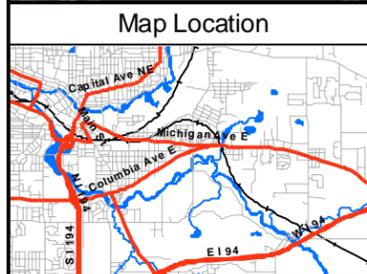
Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



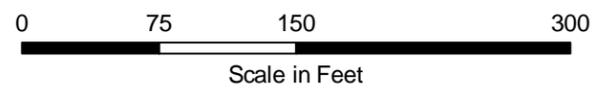
**Enbridge Energy**  
**Site: D5**



Drawn: EC 1/5/2011  
Approved: EC 1/5/2011  
Project #: 60162778



Legend	
Quarter Mile Grid Segments	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck
Equipment Storage	

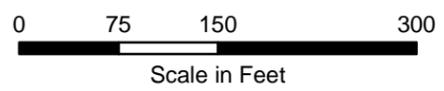


**Enbridge Energy**  
**Site: D5NW (C&M Construction)**

	
Drawn: EC	1/5/2011
Approved: EC	1/5/2011
Project #:	60162778



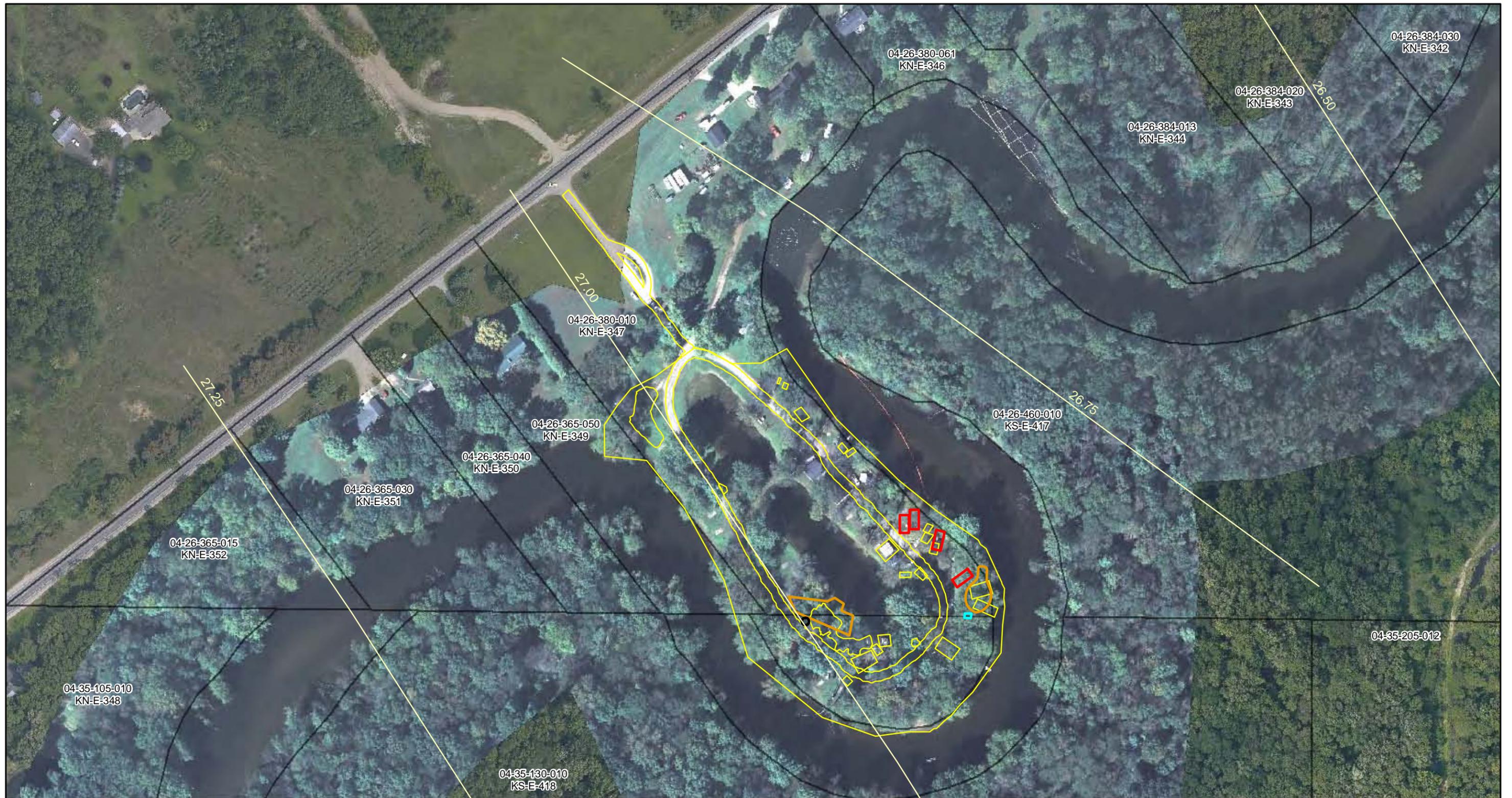
Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: E0.1 Containment Access**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck

0 150 300 600  
Scale in Feet

N

**Enbridge Energy**

**Site: E0.5**

Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck

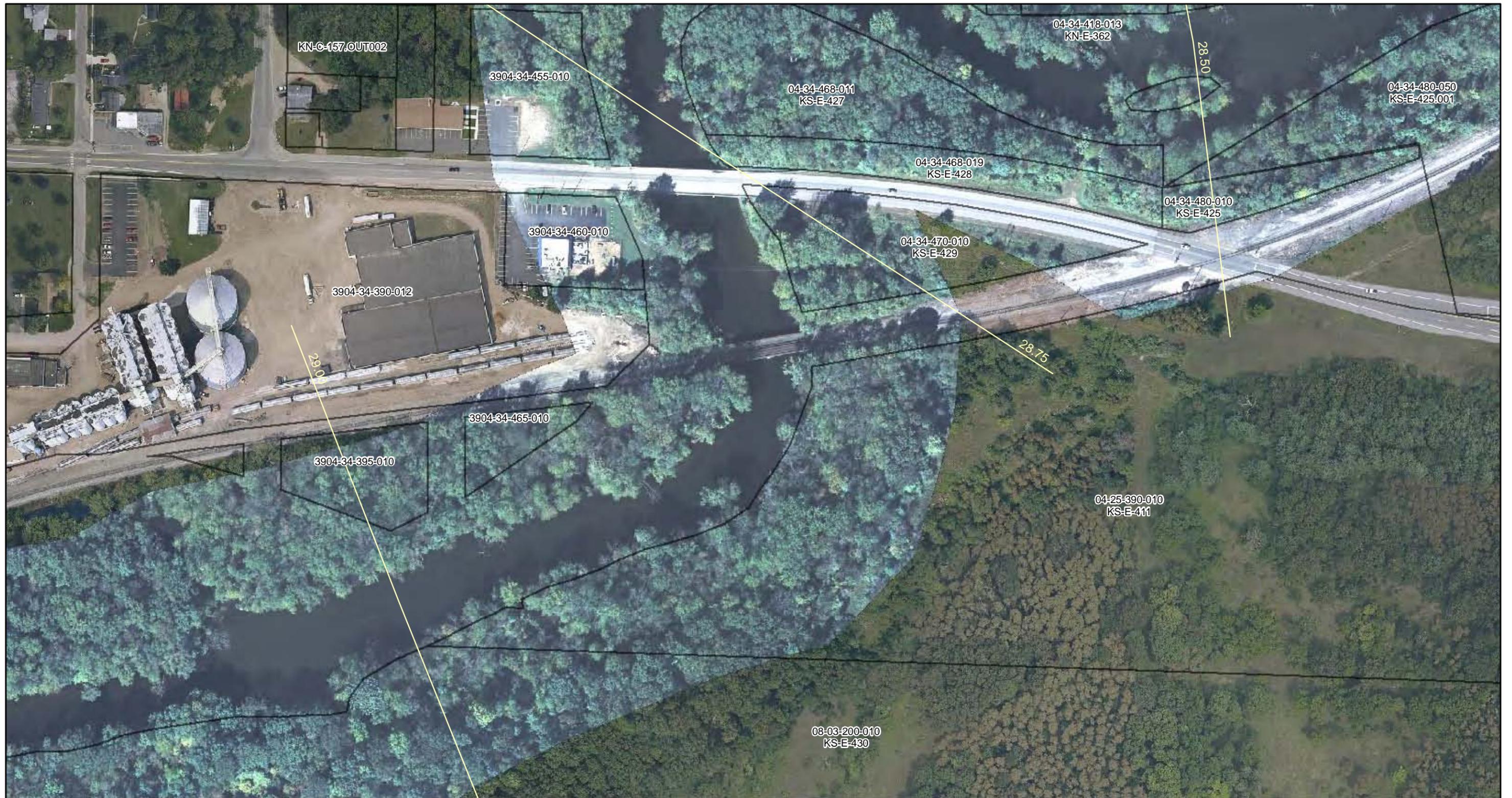
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Scale in Feet

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**Enbridge Energy**

**Site: E0.6 Containment Access**

Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck

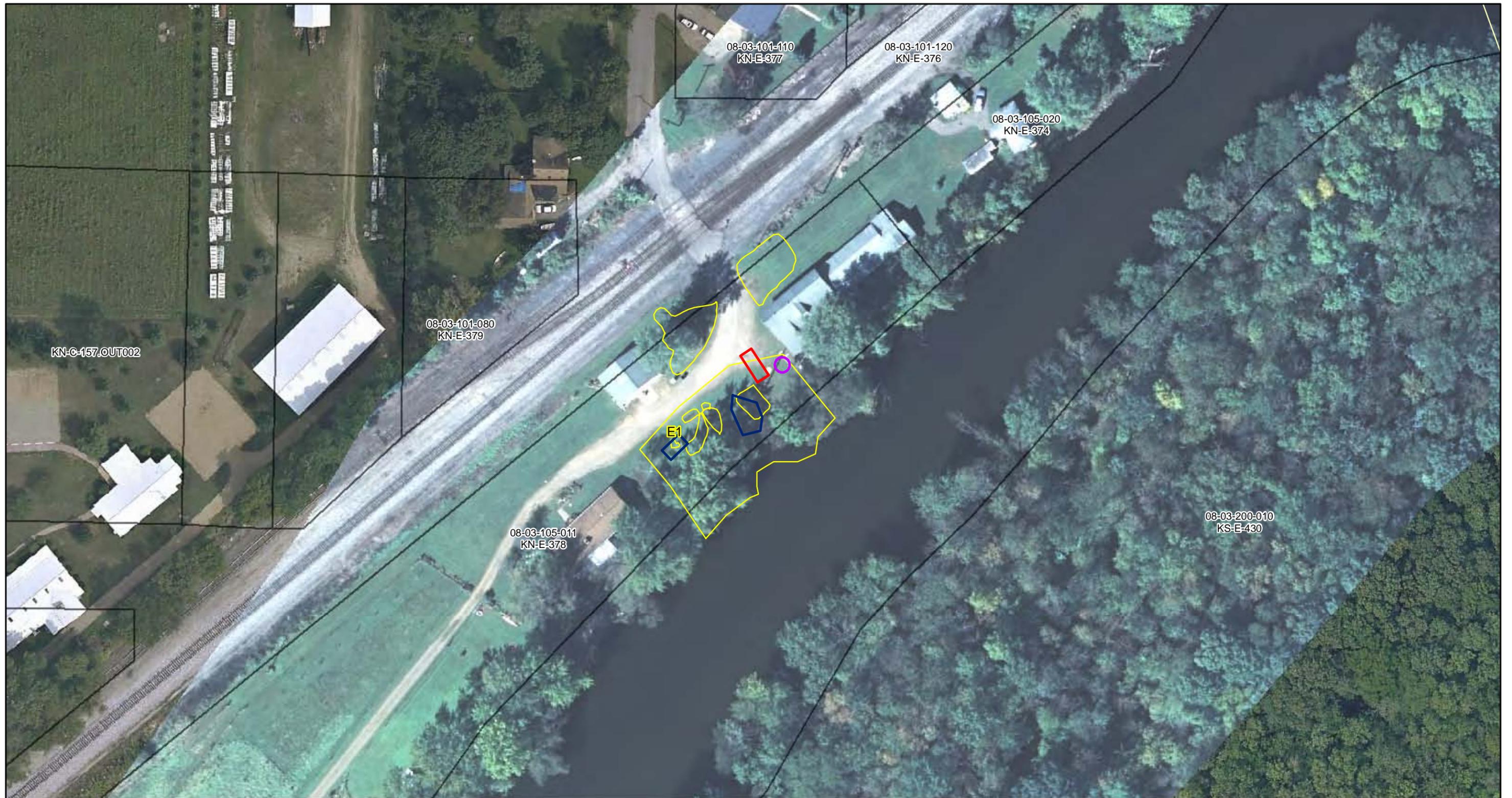
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Scale in Feet

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**Enbridge Energy**

**Site: E0.8 Containment Access**

Drawn: EC	1/5/2011
Approved: EC	1/5/2011
Project #: 60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

Site: E1



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

Site: E2



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**

**Site: E2.3**



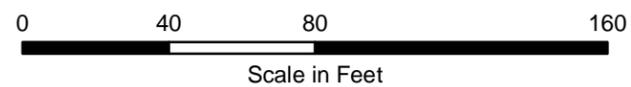
Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



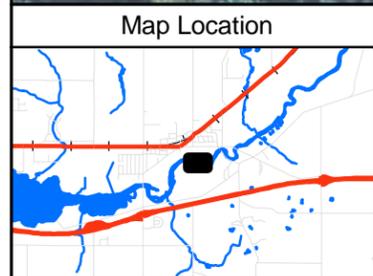
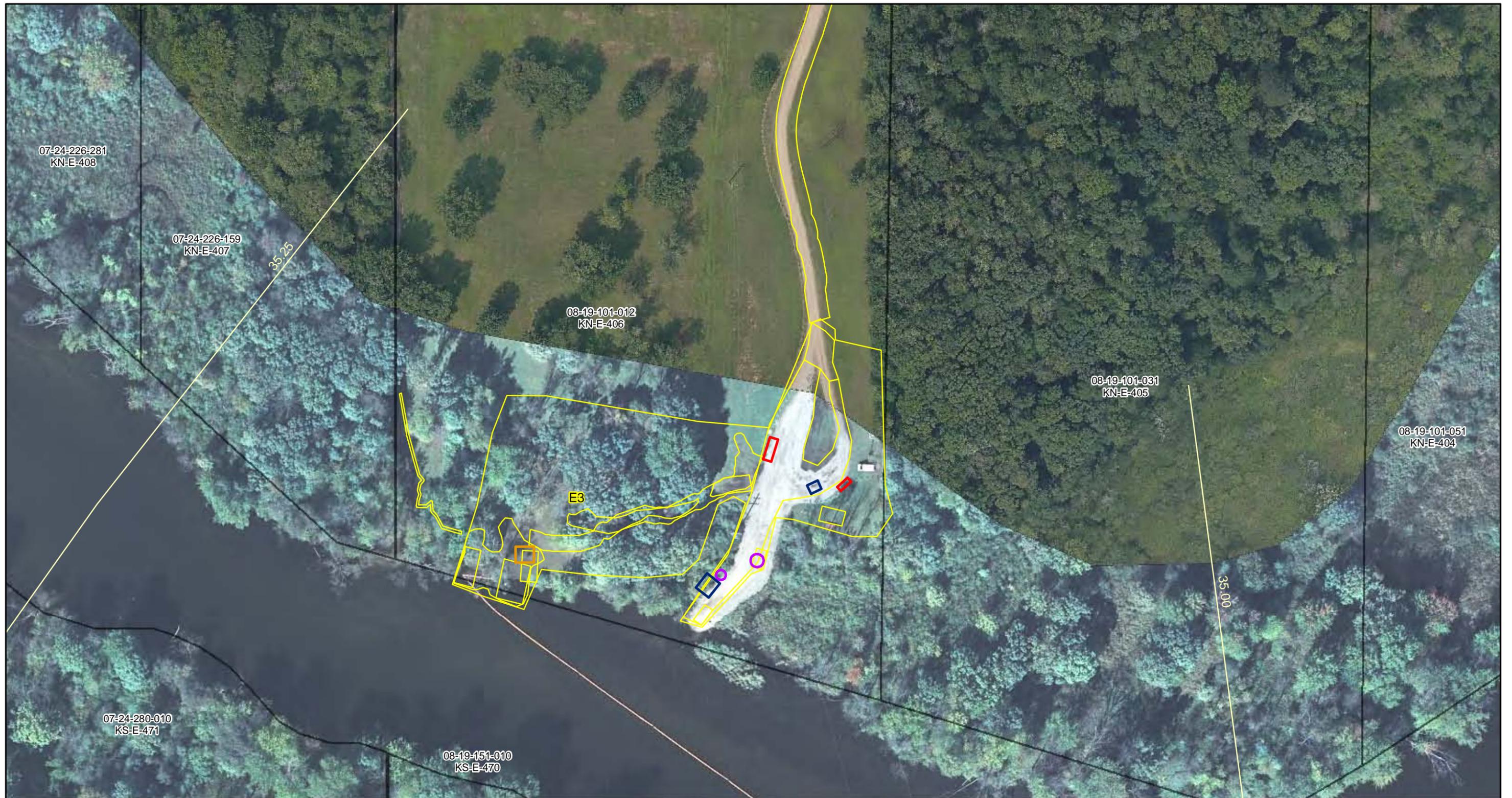
Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



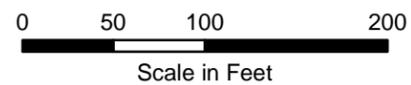
**Enbridge Energy**  
**Site: E2.4**



Drawn: EC 1/5/2011  
Approved: EC 1/5/2011  
Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**

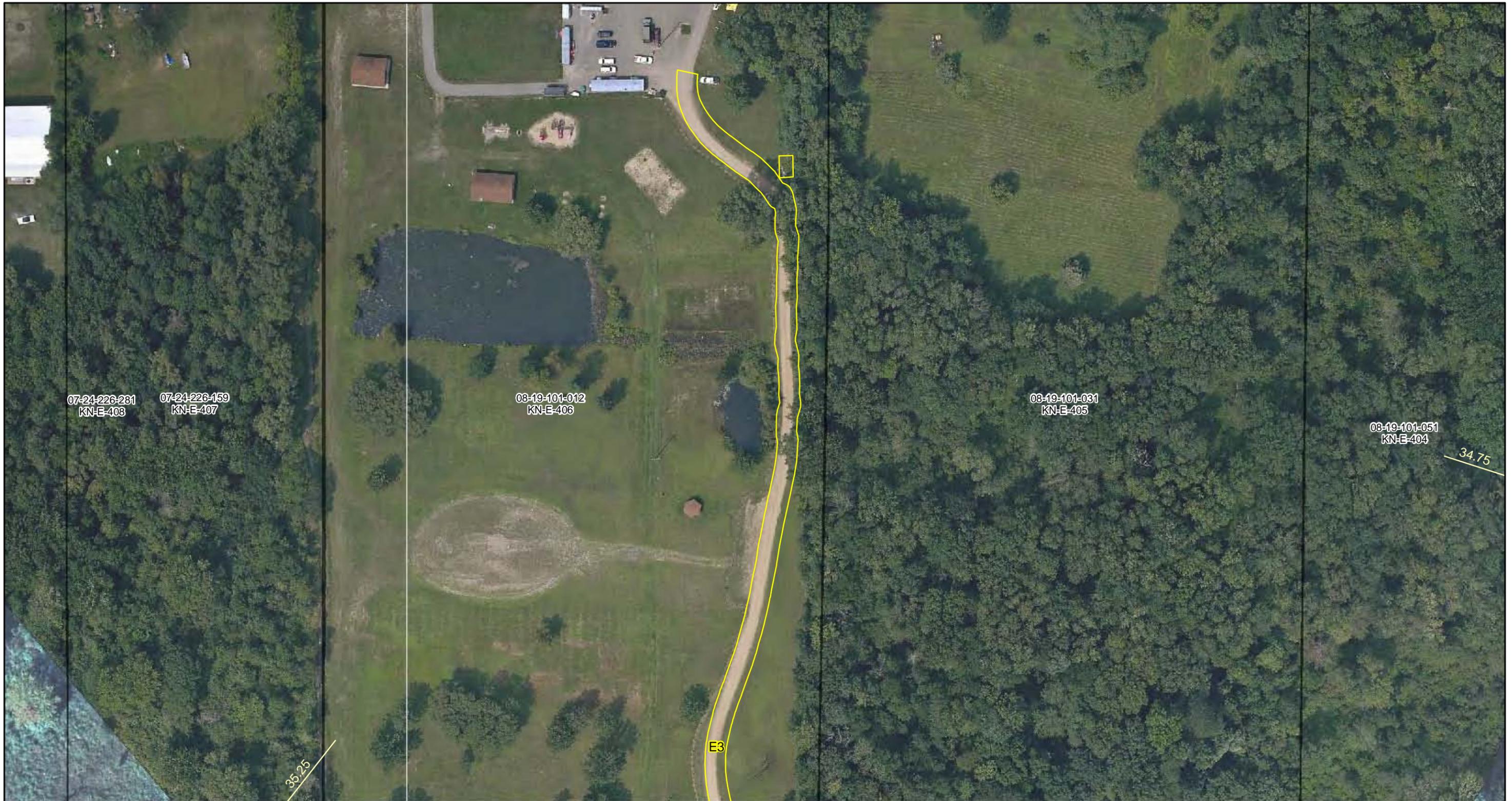
**Site: E3**



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

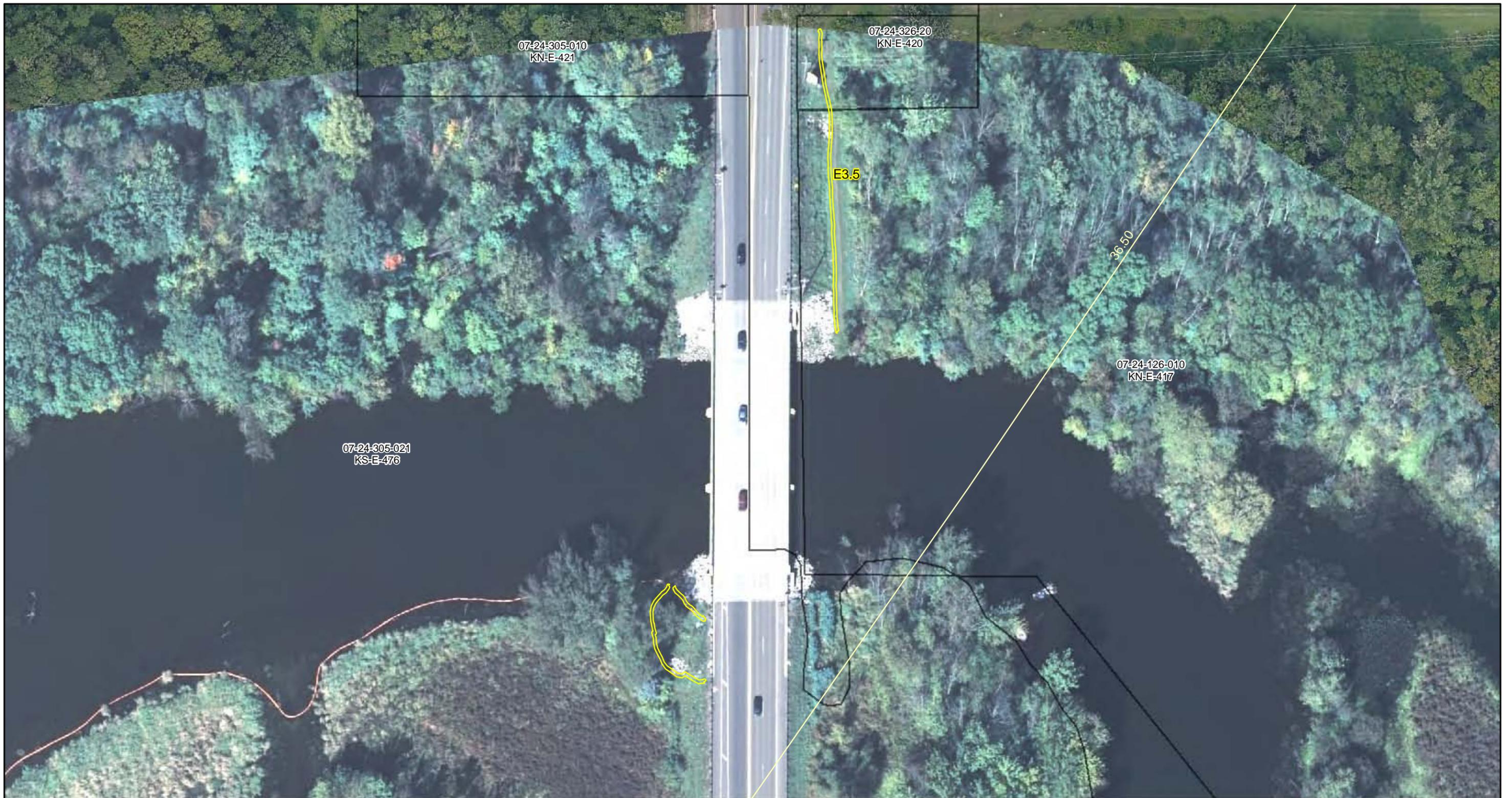
Site: E3



Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: E3.5**



Drawn: EC 1/5/2011  
Approved: EC 1/5/2011  
Project #: 60162778



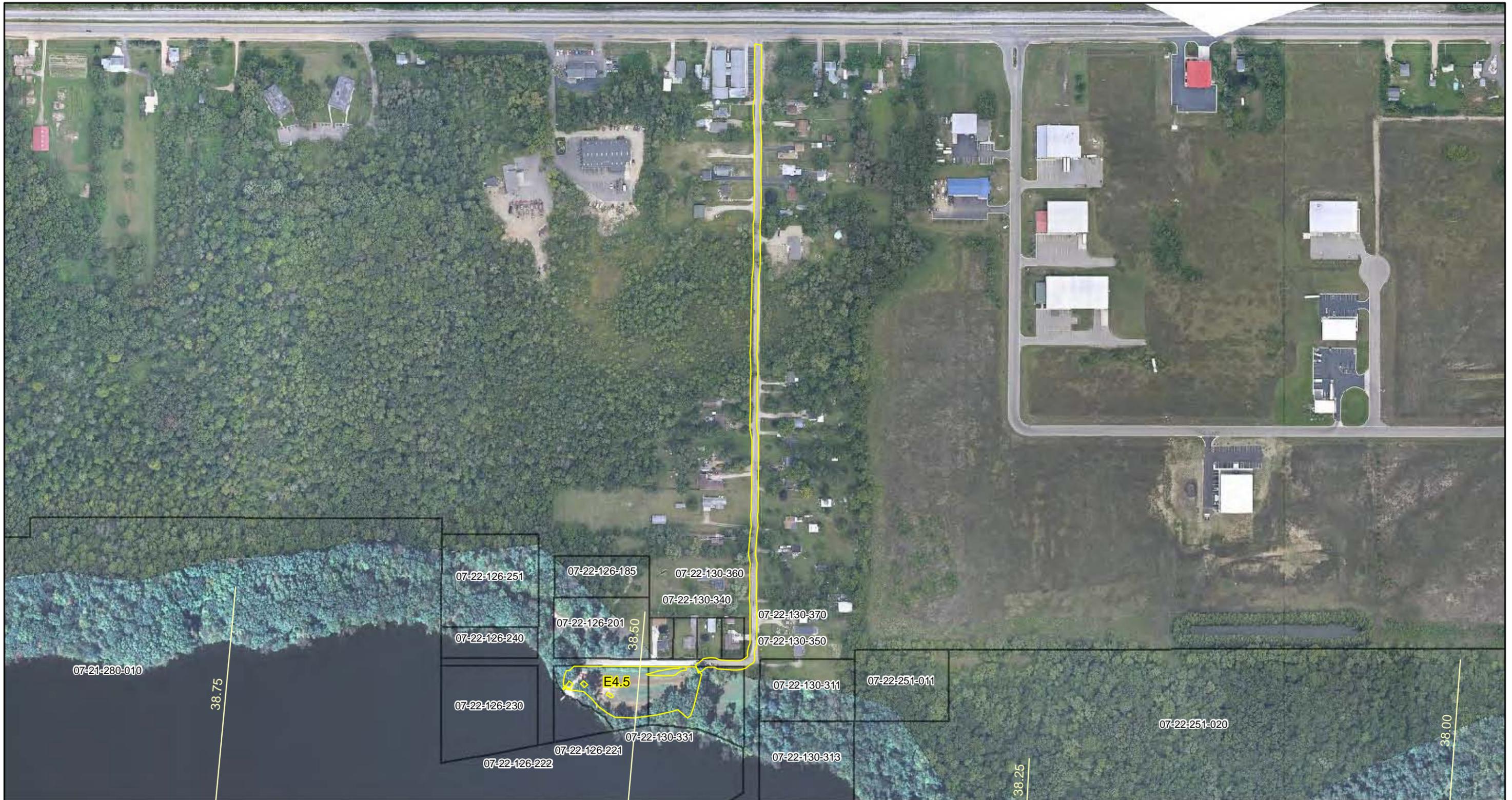
Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: E4**



Drawn: EC 1/5/2011  
Approved: EC 1/5/2011  
Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: Ramp E4.5**

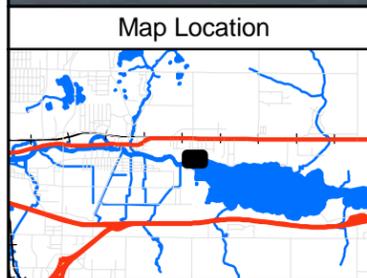


Drawn: EC 1/5/2011  
 Approved: EC 1/5/2011  
 Project #: 60162778

07-20-230-050

E5

39.75



Legend

Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: E5**



Drawn:	EC	1/5/2011
Approved:	EC	1/5/2011
Project #:	60162778	



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



Enbridge Energy

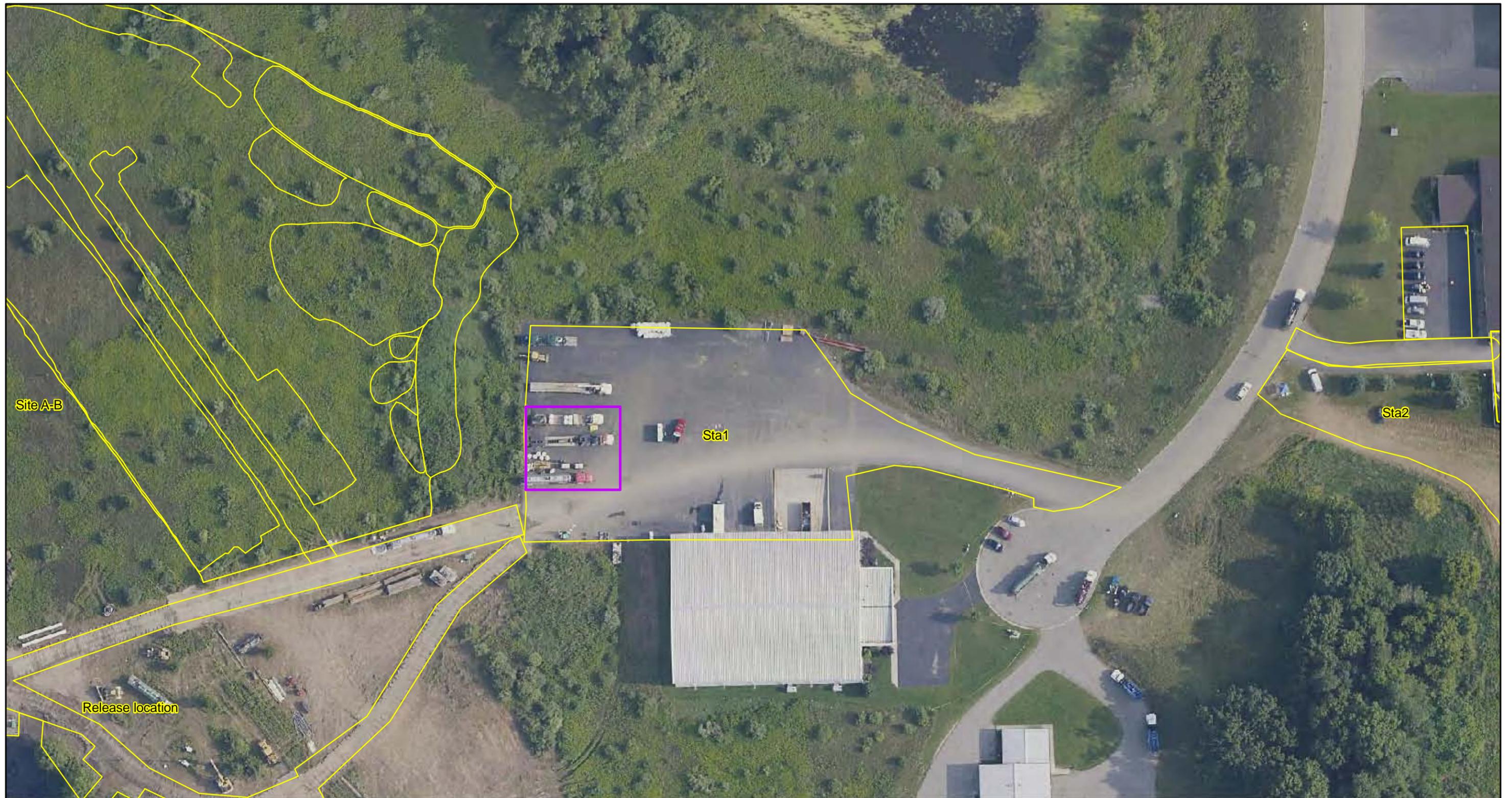
Site: E5



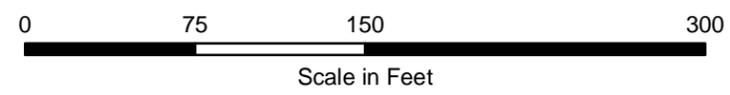
Drawn: EC 1/5/2011

Approved: EC 1/5/2011

Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: Staging Yard 1**



Drawn: EC 1/5/2011  
 Approved: EC 1/5/2011  
 Project #: 60162778



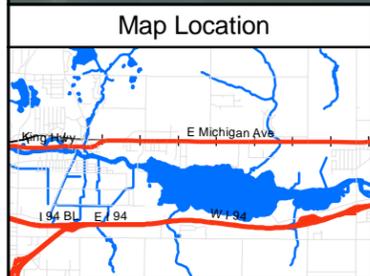
Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: Staging Yard 2**



Drawn: EC 1/5/2011  
 Approved: EC 1/5/2011  
 Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck

0      125      250      500  
Scale in Feet

N  
↑

**Enbridge Energy**

**Site: Staging Yard 3**

Drawn:	EC 1/5/2011
Approved:	EC 1/5/2011
Project #:	60162778

10-015-014-01  
KN-C-128

10-016-006-02  
KS-C-156

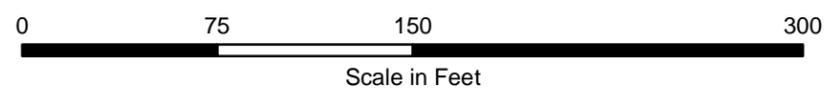
Staging Yard 5

9.75

10-016-006-03  
KS-C-155



- Legend**
- Quarter Mile Grid Segments
  - Feature Outline
  - Parcels



**Enbridge Energy**  
**Site: Staging Yard 5**



Drawn: EC 1/5/2011  
Approved: EC 1/5/2011  
Project #: 60162778



Legend	
Quarter Mile Grid Segments	Equipment Storage
Feature Outline	Frac Tank
Parcels	Fuel Area
AST	Light Generator
Decon Area	Roll Off
Chemical Storage	Storage Area
Containment Area	Vac Truck



**Enbridge Energy**  
**Site: B5**



Drawn: EC 1/5/2011  
Approved: EC 1/5/2011  
Project #: 60162778

## **Attachment C**

**Site Closure  
Site Environmental Evaluation Form  
Enbridge Line 6B MP 608 Pipeline Release**

A) Site Name: \_\_\_\_\_ Date: \_\_\_\_\_

Approximate Size & Location of the Site: \_\_\_\_\_

Inspectors: \_\_\_\_\_

- Initial Inspection       Final Inspection

Others Present: \_\_\_\_\_

Site Supervisors/ Firm: \_\_\_\_\_

B) Interview

Name \_\_\_\_\_

Employer \_\_\_\_\_

Contact Information \_\_\_\_\_

Association with site \_\_\_\_\_

Date of interview \_\_\_\_\_

Activities at site \_\_\_\_\_

Identification of spills or other releases during use and occupancy based on interview (specify)

Current Owner/Occupant of the Site: \_\_\_\_\_

Historical Use of the Site: \_\_\_\_\_

Description of Access Ways: \_\_\_\_\_

C) Activities at Site (based on interview, visual inspection or other sources)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Decontamination         | <input type="checkbox"/> Earthwork                | <input type="checkbox"/> Fueling  |
| <input type="checkbox"/> Boat Launch             | <input type="checkbox"/> Access Roads (New)       | (If so, list types of containers (eg. ASTs, 5-gallon buckets) in Section H) |
| <input type="checkbox"/> Boom Maintenance        | <input type="checkbox"/> Secondary containment    | <input type="checkbox"/> Chemical Storage                                   |
| <input type="checkbox"/> Roll Offs               | <input type="checkbox"/> Generators/ Light Plants | (If so, list types & container sizes in Section H)                          |
| <input type="checkbox"/> Porta Potties/ Handwash | <input type="checkbox"/> VAC Trucks               | <input type="checkbox"/> Other (specify) _____                              |
| <input type="checkbox"/> Mats/ Geotextiles       | <input type="checkbox"/> Streambank Stabilization |   |

D) Any Remaining Equipment or consumables: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Site Closure**  
**Site Environmental Evaluation Form**  
**Enbridge Line 6B MP 608 Pipeline Release**

E) Site Visual Inspection

E.1) Observations related to site occupancy and use (Note Locations on map and take photograph)

- |   |   |
|---|---|
| <input type="checkbox"/> Soil Disturbance                                     | <input type="checkbox"/> Evidence of release/staining in or around former decon areas         |
| <input type="checkbox"/> Vegetation Disturbance                               | <input type="checkbox"/> Evidence of release/staining in or around former fueling areas       |
| <input type="checkbox"/> Litter   | <input type="checkbox"/> Evidence of release/ staining in or around the former roll off areas |
| <input type="checkbox"/> Evidence of release (staining, verbal communication) |   |
| <input type="checkbox"/> Fill areas in flood plain, wetlands or river         |   |
| <input type="checkbox"/> Excavated areas in floodplain, wetlands or river     |   |
| <input type="checkbox"/> Brush/ Stumps/ Trees                                 |   |
| <input type="checkbox"/> Fencing damage                                       |   |

E.2) Observations related to release

- |   |  |
|---|--|
| <input type="checkbox"/> Sheen on surface water             | <input type="checkbox"/> Oil on tree trunks, vegetation, logs                    |
| <input type="checkbox"/> Oil on river/creek banks and rocks | <input type="checkbox"/> Oil on structures (piers, bulkheads, bridges, culverts) |
| <input type="checkbox"/> Petroleum odor                     | <input type="checkbox"/> Other (specify)   |
| <input type="checkbox"/> Citrus odor                        |  |

Notes

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E.3) Adjoining Properties

North:

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South:

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East:

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West:

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F) Records reviewed (Describe)

- |   |       |
|---|-------|
| <input type="checkbox"/> Aerial photographs (dates and source)  | <hr/> |
| <input type="checkbox"/> Other photographs (dates and source)   | <hr/> |
| <input type="checkbox"/> Inspection reports (date and source)   | <hr/> |
| <input type="checkbox"/> Other (specify)  | <hr/> |
| <input type="checkbox"/> Identification of spills or other releases based on records review (specify) | <hr/> |

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G) Recommendations:

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H) Other Notes:

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**Site Closure**  
**Site Environmental Evaluation Form**  
**Enbridge Line 6B MP 608 Pipeline Release**

l) If Phase II Activities or remediation occurred on-site provide the following information:

Date of Remediation Activities: \_\_\_\_\_

Location & Description of Area: \_\_\_\_\_

Size of Area Remediated (including square footage & depth): \_\_\_\_\_

Description of Activities Performed: \_\_\_\_\_

No. of Samples Collected: \_\_\_\_\_

Backfilling/Restoration Activities: \_\_\_\_\_

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_